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Proinnovation processes in the European Union: Relationships between European and regional level

Leszek Kwieciński

University of Wrocław
Institute of International Studies
ul. Koszarowa 3, 51-149 Wrocław, Poland
e-mail: leszek.kwiecinski@uni.wroc.pl

Abstract:

This article shows the main aspects of Europeanization of the innovation policy. Especially important is the regional aspect of this processes because on this level all European guidelines should be implemented. Regional resources like culture, human and social capital, institutional infrastructure are the key factors, which should transfer knowledge based economy into the practice. In this context we can observe a lot of critical factors. The author makes a qualitative analysis of all of these factors on regional level.

Keywords: proinnovation policy; regional innovation system; Europeanization

JEL codes: F15, O31

1. INTRODUCTION

Since the beginning of the 1990s three processes have grown to become highly significant in most countries of the European Union:

- cohesion,
- subsidiarity,
- creating knowledge-based society, not only economy.

Since 2000 the European Union has been trying to implement within the framework of its first pillar i.e. policies which are coordinated at Community and not national level, the so called new policy of cohesion. A few key principles of such a policy have been assumed.

Firstly, the main guideline should be integration of the main policies of the EU coordinated in its first pillar: regional, innovation (research and development) and social. Such a holistic approach of the key policies of the EU shall ensure significantly greater effects than the previous so called “policy of programs”, which was the basis of often contradictory tasks and objectives for the policies mentioned above. Regional Innovation Strategies are examples of such a cohesive approach.

Secondly, the cohesion of policies shall be complemented by the coherence of objectives in the scope of implementation of the assumptions of Lisbon Strategy and now Strategy Europe 2020 and consequently in connection with this new horizontal the objective shall be achieving social, territorial and economic cohesion. This means that such objectives and tools have been offered for the new policy of cohesion which shall allow for building EU system of competitiveness at regional level. The new cohesive region in the EU is the area in which currently a strong system of network connections is being developed through which the entities belonging to the network have access to jointly generated external and internal benefits such as economies of scale, scope, benefits of closeness that is benefits of agglomerations, benefits of urbanizations or recently so energetically promoted benefits of metropolization, which derive from huge urban systems with complex metropolitan functions. Due to the network connections between managing entities the drawing of competitive edge from external and internal sources frequently takes place not in the direct way, as would be suggested by the shortest line and time connections, but indirectly seemingly illogical and longer. The benefits generated in natural network systems are not fully capitalized on due to various kinds of communication, administrative, cultural, political, social, technological and other barriers. With the use of the tools of the new policy of cohesion such as Regional Innovation System (RIS), the European Union allows for avoidance of many such barriers and more efficient communicating, development of new more efficient network systems and consequently more efficient management of resources (Simmie 2002).

Thirdly, as already mentioned the key actors on the forum of the European Union that have been obliged to cooperate with the European Commission in respect of implementation of the provisions of the new policy of cohesion are the regions in member states. The regions have also been engaged to a large extent in building of the so called European Research Area (ERA). The concept of building the European Research Area includes pillars 6 and 7 of the EU Framework and Horizon 2020 Program and Lisbon Strategy. The basic condition of the success of ERA is the fact that the concept shall be built from the “bottom” by the regions of the European Union member states. As a result of the application of this approach the European Commission wants to find the answer to the question of how to coordinate the activities in the scope of research and development (innovation) policy with other sector policies and especially with those whose center of weight regards integrated development at regional level (European Commission 2001).

2. FROM EUROPEAN STRATEGY TO REGIONAL IMPLEMENTATION

Here turns up the issue of coordination of the assumptions of research and development policy more and more often called innovation policy and policy regional. The research and development (innovation) policy – acc. to Bränling and Harmsen (1975) refers to the financial, organizational and legally oriented operations aiming at creating, stimulating and regulating production, results of

research and technology (Bräunling & Harmsen, 1975). Placing of emphasis in this definition on the regulatory function as the significant element of this policy demonstrates it as active structural policy aiming at modernizing national economy. The innovation policy has numerous connections with important sectoral policies such as armament policy, infrastructural policy, environmental protection policy, fiscal policy and regional policy (Sternberg, 1998). The very Regional Innovation Strategies which shall in effect create regional innovation systems in a given region constitute the common tool of implementation of the assumptions of the regionally oriented innovation policies. The similarity of the assumptions of these two policies is the result of two more facts:

- they both are co-financed from structural funds (regional policy instrument) or/and framework programs (innovation policy instrument) and thus by the European Commission from the Community budget,
- they both shall support firstly the implementation of the assumptions of Lisbon Strategy and now Strategy Europe 2020.

Since 1992 due to the introduction of the principle of subsidiarity, which is in line with the trend to regionalize Europe to Maastricht Treaty (process of extending independence and self-government of regions as well as local territorial units) and strengthening the civil society, the significance of the support of innovation instruments of regional development such as regional innovation strategies has grown even more.

In order to resolve all the problems described in all European strategies, the European Union as a whole and each of its member states should focus on creating such instruments which would stimulate the operations of the sector of private enterprises as well as the sector of science and technology. RIS's are the very tool which allows and to a large extent facilitates the cooperation of enterprises and scientific centers from universities to specialized research entities.

The European Union due to the necessity to compete at global level by popularization of the criteria of economic rationality in managing the regions must try to achieve a specific standardization of regional and local divisions. With the use of such standards it shall be easier and more objectively to implement the principle of subsidiarity and interregional and international solidarity which is the organizational basis of political functioning of the EU. It is obviously a long process. One of the key factors of further rationalization of territorial divisions may be so called regional innovation systems – the areas spatially limited by region researchers.

The concept of a regional innovation system comes from observation of the current territorial and production systems, which demonstrate specific ability to interactive development of permanent competitive edge of managing entities belonging to a given system. Apart from obvious location factors the source of such permanent advantages is the strong network connections and ability of the users of a given territorial system to cooperate (European planning studies, 1996).

Another important element which to a large extent affected the popularity of creation of RIS's in innovation policy of highly developed countries was the introduction of the notion of "knowledge-based economy (KBE)" by OECD in 1996. The term KBE was coined on the basis of empirical analyses as well as a summary of numerous theoretical works on the role of knowledge in economy and innovation systems. It should be strongly stressed that there is not one truly correct recipe for the development of KBE. The literature on the subject distinguishes two kinds of development of KBE, namely *laissez-faire* (liberal) and controlled (including development controlled mechanically and development controlled organically). The driving force of the Silicon Valley were the free market forces supported to some extent by the control mechanisms, whereas KBE and consequently the creation of RIS in most countries of Western Europe have been created not by the dynamics of the market forces but primarily by the strategy of thinking and operations of public forces, which skillfully use the opportunities generated by globalization processes (Kukliński & Orłowski, 2001).

When referring liberalism to globalization and regionalization another problem arises here visible both in the EU countries. On the one hand, the liberalization of international economic relations increases the pursuit of the decentralization and independence of regions in order to release their competitive skills. On the other hand, the economic liberalization leads to the growth of territorial variations which create premises for increasing centrally imposed redistribution. This originates the thesis that modern regionalism is the winners' movement (it creates territorial "drivers of growth"), whereas the old regionalism based on the pursuit of leveling off territorial variations is the movement for losers" (Kukliński, Orłowski, 2001). Both processes are visible in the EU where at the present stage of evolution of the EU the assumption of the *Value for money* principle and rejection of the principle of solidarity is offered. The EU countries want to support the initiatives which bring so called added value and do not focus only on equalization leveling off differences between the poorest and the richest regions. In sum, it can be noted that the regional process of creating Knowledge-Based Economy refers both to the issue of cohesion of activities and their subsidiarity.

The three horizontal processes were compared with so called European paradox diagnosed in 1994 which demonstrated that high level of scientific research did not and still does not translate into the ability to adapt new products, technologies and organizational solutions in the market. Europe is the world leader in the scope of basic research, whereas it loses decisively to both the USA, Japan and perhaps also with Asian countries in the scope of implementation (commercialization) of new scientific discoveries.

The European paradox was presented in the first European report from October 1994, which described strong and weak areas of the European sector of science and technology. A few premises of the maintaining of that paradox were identified. The following are those, which directly affected the necessity of

introducing a new instrument of policy of innovation in the regional aspect, namely Regional Innovation Strategy:

- insufficient private investments in research;
- no coordination of national and regional policies;
- no European standards;
- classification of legal procedures and organizational structures;
- developmental gaps of state research institutions;
- legal and political constraints impeding the cooperation of scientists, entrepreneurs and public institutions.

To use the words of Porter (2001) the EU countries were and still are the leader in the scope of creating intentions but not innovations (Porter, 2001). As a result of analyses of the processes listed above the European Commission proposed in 1994 a new form of the development of regions that is RIS.

3. THE ROLE OF REGIONAL RESOURCES

Modern approach to the development strategy is based on looking for safe and permanent bases of growth inside regions with the commitment of local communities, oriented towards support of entrepreneurship, innovation, transfer and commercialization of technology, improvement of competitiveness, local and regional business activity programs that require professional institutional surrounding. In practice it means a need for establishing local development institutions specialized in operations for the benefit of economic growth (Matusiak, 2001) by:

- supporting entrepreneurship, self-employment, facilitating start and aid for newly established private companies; promotion and improvement of competitiveness of SME;
- providing conditions for transfer of new technological solutions for economy and carrying out innovative enterprises;
- increasing the quality of human resources by educations, trainings and consulting as well as popularization of patterns of positive activities;
- managing resources and carrying out infrastructure enterprises;
- creating networks of cooperation and partnerships of various entities operating for the benefit of dynamics of growth, increasing of welfare and resources of inhabitants.

The great myriad of objectives and necessity of taking into account local and regional conditions determines huge variety of organizational and institutional forms. The primary characteristic of the institutions in question is their non-commercial character. The objective of their operations is not to maximize profit but to meet unusual needs, initiate changes and transformations of local communities (Drucker, 1995). They provide services in the market by creating specific infrastructure which enables dynamization of growth processes and implementation of set strategies. Due to the scope of actions undertaken, mission and objectives as

well as the assumption of non-profit character this category of institutions shall include the following kinds of entities:

- funds and associations or units established by them which implement programs of development of entrepreneurship and transfer of technology as well as operate for the benefit of local growth;
- public-private partnerships established on the initiative and with high organizational and financial commitment of public authorities which undertake pro-growth activities and are not obligated to generate profits to be divided between the shareholders¹;
- chambers of commerce, trade organizations, associations and unions of employers as well as other institutions representing business undertaking pro-growth initiatives and activities;
- organizationally and financially separate local units oriented to the support of local economic growth.

The structure and scope of tasks undertaken by individual institutions is determined by: objectives of local/regional strategy of development, cultural conditions, economic situation and the level of economic development. At the same time there is no one universal organizational and functional pattern for the institutions in question. The operations of each of them depends on: resources obtained from the shareholders, assumed mission, capabilities and professional preparation of the employees, external possibilities of raising funds for statutory operations, perception in local community. It is quite popular though debatable thesis that the institutions supporting economic growth serve their functions better in smaller communities and regions which have been fighting with specific economic and social problems for many years. The institutions in question are becoming more and more popular channel of redistribution of public and international funds for the regions which suffer certain economic, structural and social difficulties (King & Schneider, 1992).

The supporting institutions enable activation of internal (endogenic) resources and full utilization of local factors of growth. The modern strategies of growth do not use any more hierarchical structures based on a large scope of state interventionism and more often use network relations and citizens' initiatives facilitating penetration of ideas and exchange of information. The growth of the region should be stimulated by local needs and the will to change voiced by the inhabitants. The non-governmental organizations operating for the economic growth in such conditions provide a chance for:

- mobilization of all actors of local growth, activation of social groups standing on the sidelines, creation of the atmosphere of mutual trust and common goals;
- development of public-private partnership and socialization of economic policy, and in this case policy of innovation;

¹ This category often includes organizationally separate units which are active in the area of support of entrepreneurship and transfer of technology connected with public administration, schools of higher education, chambers of trade and commerce, trade unions.

- introduction of mechanisms of competition in the use of public funds, making pro-growth activities less bureaucratic;
- combining public with private funds and raising external means for pro-growth and infrastructural enterprises;
- development of modern forms of transfer of technology, supporting entrepreneurship and local marketing.

Functionally, the institutions in question focus their activity on the crucial for the processes of growth areas of support of entrepreneurship and innovation processes in the form of:

- dissemination of knowledge and skills by consulting, trainings, information available through training and consulting centers;
- aid in transfer and commercialization of new technologies through centers of transfer of technology;
- financial aid (*seed and start-up*) in the form of semi-banking loan and guarantee funds offered to persons undertaking economic activity and young firms without credit history;
- broad consulting, technical and location aid for newly established enterprises during the first stage of their operations in incubators of entrepreneurship, technology incubators and technology centers;
- creating clusters of enterprises and animation of the innovation environment by combining on specific developed area of business services and different forms of aid provided to firms in: technology parks, business zones, industrial parks.

The development of centers of innovation and entrepreneurship usually causes strong impulses for growth identified in local and regional perspective in the scope of:

- so called “diffusion of industrialization” taking place through the incubation of new firms (often connected with crafts) which make use of local skills which have been present for a long time in local culture in the peripheral and economically underdeveloped regions;
- strengthening market structures with new technological companies with great competitive power thanks to innovative skills which enable continuous adaptation of new products and technologies;
- development of high-tech industrial complexes and systems of innovative incubation in city agglomerations which possess strong academic base.

The origin of the supporting institutions goes back to social and cultural initiatives implemented traditionally on the margins of public and private sectors. The changes that took place in Western societies in the last quarter of the 20th century (USA – the turn of the 60s and 70s, Western Europe – late 70s) provided the non-governmental institutions, as the catalyst of changes and economic growth, with new possibilities (Matusiak & Zasiadły, 2004).

The theoretical concepts of the regional development are affected partly by newly defined concept of so called economy of innovation according to which the innovations are not linear but evolutionary, cumulative, multilevel process which is carried out with the social and economic cooperation and interactions and which results in novelties in the technological, organizational and social areas (Koschatzky, 2001). The literature on the subject refers to three fundamental arguments in favor of the concept of regional growth understood this way:

1. Spatial proximity – the fact of proximity between enterprises generates positive external effects, which are implemented through smooth and specialized division of work. By creating regional culture and identification, that is with the use of social processes, a base for mutual trust and cooperation between regional actors creating hierarchical and horizontal network connections is established. The concepts of learning regions and regional innovation systems indicate that the spatial proximity supports the generation of a collective process of learning and exchange of information as well as knowledge inside the region, especially in the case when the knowledge is implicational in character and consequently spatially bearing.
2. Networks and cooperation relations – horizontal and hierarchical cooperation relations full of trust are a significant resource of connecting / bonding innovative partners. The creation of a complementary structure of resources is an advantage of network. In this case the spatial proximity is not the only condition of creating networks; it may, however, support their development.
3. Regional variations – refers to the possibility of creating inter- and intraregional networks of production and dissemination of information by regional actors (Koschatzky, 2002).

Apart from these variables we should also indicate the four key components which shall determine both the framework of organizational as well as institutional activities and the choice of appropriate political strategy for the innovative region. They include: regionalization – understood as a decentralization of political competences (executive, decisive), extension of the arena of political activities by joining specific functional sub-systems of the regional political system, cooperation between public and private entities and coordination of the areas of operation of sectoral policies and actors implementing them (Batt, 1994).

4. THE CULTURE OF THE REGION VERSUS THE SECTOR OF ECONOMY

Taking into account the fact that the regional innovation system should become one of the functional sub-systems in the regional political system, its institutionalization should be “anchored” in the so called general culture of the region which shall determine both the process of creating this system and its material and non-material effects. In the scope of the discussion over this general culture of the region it is crucial – especially from the point of view of the presented opinions – to distinguish the bureaucratic from innovative society (Peters, 1999). In a bureaucratic society

the social expectations of public administration as well as the scope of its functions (including mainly the regulatory one) are greater, whereas in an innovative society the processes of self-organization of the society with the self-restricting role of public administration are more developed. In the case of New Member States in the EU, such an innovative society may seem to be the panacea for all problems of the post-transformation capitalism. It may be then perceived as a way to limit unemployment, as a way to economic activation of the society and consequently as a way of building and strengthening the civil society. The existence of such a solution is a symptom of existing innovative society and development of all kinds of non-government organizations, including business surrounding institutions which while maintaining the substitutive and complementary relations with public administration may undertake activities consisting of:

- providing assistance (direct aid, consulting, education, information);
- implementing obligations of pressure groups;
- filling the gap in the system of public support;
- safeguarding the following principles: voluntary work, entrepreneurship, co-participation, variability, etc.

Each functional sub-system may also be considered in the following four aspects:

- hierarchic structure and equality both inside the political sub-system and in relations with other functional sub-systems of the region;
- freedom and obligation in the relation between interest of an individual and general interest;
- commitment and loyalty to the communities with which individuals identify themselves;
- trust and distrust in administration and inside micro-communities (Peters, 1999).

In connection with these aspects and earlier distinction of bureaucratic and innovative society, two general models of management of public administration can be identified. The characteristic features of the first of them – bureaucratic – include the following:

- hierarchic and stiff organizational structure;
- activities directed inside and toward procedures;
- dominance of short-term activities;
- commitment to maintain the current state;
- lack of cooperation with other sectors, including business, innovative organizations and entrepreneurship (Herbut, 2005)².

The other model – managerial – is the opposite of the bureaucratic one and its characteristic features include the following variables:

² These institutions include: training and consulting centers, centers of transfer of technology, centers of technology, incubators of entrepreneurship, incubators of technology, industrial parks, science and technology parks.

- diversified, flexible and functional organizational structure;
- activities directed outside and toward specific needs of the regional actors;
- long-term objectives which shall generate effects in the long time term;
- frequent external audits and
- partnership and active cooperation with other sectors of the regional system (Miszczuk, 2001).

The implementation of principles of the managerial model whose main criterion of assessment of the functioning of public administration is the quality of services, efficiency of actions, rationalization of expenses and administrative structures, dynamization of the development processes, increase of competitive position of the economy, creation of new “high value” workplaces, etc. is necessary for building regional innovation. One of the examples of rationalizing public administration this way is the concept of *New Public Management* in which the structures of public management are adjusted to the assumptions and objectives and not the other way around. In general this concept assumes that administration and management of this sphere of activity of the state requires the application of instruments adequate for the enterprises operating in the market.

The elements of general culture of the region described above and the concepts of public administration resulting from them are connected by feedbacks with the sector of enterprises. The entrepreneurs constitute the final, yet not decisive for the processes of transfer of knowledge and technology and innovation, link in the regional innovation system (so called demand-driven approach to the processes of innovation). The category of “enterprise” covers numerous institutional and legal forms such as new technology firms (e.g. *spin-offs*, *spin-outs*), young firms (e.g. *start-ups*), traditional manufacturing firms or/and service, micro, small and medium-sized enterprises, large companies (including so called flagships of the regional economy), foreign firms (both central headquarters and branch offices). The role of the enterprise consists in transferring available knowledge into innovation processes, products, services, sales methods, distribution, organization, market segment. In this context then their competitive capacity which is expressed in prices of production factors, HR quality, the way the resources are used, quality of management or the innovativeness itself is important (Fritsch, Koschatzky, Schätzl & Sternberg, 1998).

Only having specified the theoretical boundry conditions for creating the regional innovation system can this system be defined, its division determined and other factors which might implicate it again identified.

5. CONCERNING SYSTEM'S CHARACTERISTICS

Such a system is a set of various entities (actors), which affect the processes of innovation and connections (relations) taking place between them. This is a system of entities, interactions and events which as a result of synergy are generated in a specific territory and increase the capacity to absorb and diffuse innovations in

the region. The regional innovation system is a system of inter-dependences and connections taking place between the sphere of science, R&D, industry, finances and public authorities, which favor the processes of adaptation and collective learning. The existence of network connections and innovation environment is the basis of such an activity (Jewtuchowicz, 2005).

OECD identified four forms of connections in such a regional innovation system (OECD, 1999):

- enterprise- enterprise connections, including the connections with commercial knowledge-intensive services for business (e.g. joint R&D activities, common products, patents). Frequently as a result of such connections clusters develop;
- enterprise-sphere of knowledge and research connections as well as public transfer of technology institutions (joint R&D activities);
- market transfer of technology that is diffusion of knowledge and innovations by e.g. purchase of machinery, equipment, licenses (indirect expenditures on R&D);
- mobility of employees and transfer of hidden and unidentified knowledge.

The regional innovation system consists of complementary and inter-dependent sub-systems which include (Markowski, 2000):

- production and services sub-system, which is created by business entities dealing with technological and industrial operations, implementations and commercialization of new solutions;
- research and development sub-system which is composed of different kinds of research and development entities, universities and other institutions of science operating in the area of innovations and transfer of technology;
- institutional sub-system which is composed of the whole myriad of entities supporting the course of innovation processes (centers supporting innovations and transfer of technology) such as parks and incubators of technology, transfer of technology centers;
- financial sub-system which is composed of financial entities and instruments facilitating the generation of innovations and transfer of technology to economy such as loan and fiduciary funds, banks, venture capital and private equity funds;
- social and cultural sub-system which constitutes the cultural features characteristic and specific of a given region (tradition, history), systems of values, forms and channels of communication, level of trust – system of specific behaviors and unrepeatable cultural and structural features of a given region which is at the same time a consulting platform with social and civic partners.

Referring the sub-systems presented above to the territorial implications in which they operate, three areas can be identified, which transcend one another: knowledge, innovation and consensus areas (Etzkowitz, 2002).

The regional innovation system is then a complex, territorial and systemic look at the problem of the innovativeness of an economy. Its functioning favors the reduction of innovation risk for a specific business entity, facilitates the absorption of different kinds of knowledge, provides a possibility of interactive learning and exchange of experience. It is the basis of building competitiveness of the region in the era of global economy where innovation, knowledge and the process of learning are the key factors of business success. It also allows for adaptation of regional economies to the process of globalization.

The regional innovation policy should be created on the basis of the regional innovation system defined like this, which is usually a kind of materialization of the provisions of the regional innovation strategy. The regional authorities are the element binding the activities of individual elements of the regional innovation system.

The regional innovation systems are usually administratively separate systems. In addition to the administrative approach, each region should rely on historically determined sense of regional identity or geographic conditions.

The extent to which all relevant regional actors are taken into account in respect of their inclusion into the framework of the regional innovation system and the compatibility of administrative activities as well as morphological and cultural conditions may affect the success or failure of this functional sub-system.

The criteria of successfulness include the following:

- possibly high motivation as well as legislative and executive competences of public or public and private structures of management;
- creation of the factors increasing the level of trust as the basis of cooperation and network;
- broad dissemination of information;
- regional awareness developed to a large extent by regional actors who may and even should define the profile of the region evolution;
- current monitoring able to define the means of implementation and their effectiveness as accurately as possible;
- participation in as many entities as possible;
- openness to the experiences of other regions, including foreign ones;
- openness to new, unconventional ways of solving regional problems.

On the other hand, the failure factors also should be defined and listed here:

- the lack of concentration of the resources (legal, financial, organizational) on enterprises, primarily from the sector of small and medium-sized firms;
- confrontation of forces in the region, which may result in the blockade of the implementation of the means to fulfill the obligations in respect of creating the regional innovation system;
- ineffective management of the means,

- too long period between the development of the regional innovation strategy and the implementation of the first notable activities/processes, which may result in demotivating the participants of the sub-system;
- overlapping of the decisive competences or their imprecision;
- no relevancy of the issues of innovative processes, which may result in the lack of legitimization of the objectives of the regional innovation policy;
- serious structural drawbacks within a sector of the sub-system e.g. insufficient human capital, too small/weak financial capital market, demand and supply discrepancies, etc. (Tödling, 1999).

6. CONCLUSIONS

Summing up, all implications described above, which constructively or degressively affect the development of the regional innovation system have an endogenous aspect. It is obvious that no analysis of the regional phenomena shall be made regardless of the context of global changes (general processes). It is then the issue regarding the determination of the role of the environment in which the system may develop or what external factors may determine its institutionalization.

Institutionalization of a RIS should be understood within the sphere of the non-institutional theories. These theories indicate epistemological assumptions regarding the way of perceiving the processes of regional growth – the system of regional economy as a network of mutual relations between individual business entities, which are affected by such phenomena as trust, cooperation or mutuality; the most significant factors for the economic growth of a given area include the formal and informal institutions, first of all cultural norms, the methods of organization of economic system, mainly in respect of transfer of information and knowledge, learning skills, presence of structures of cooperation and mutual commitment as well as a specific legal system especially in the scope of ownership rights)regulating the functioning of these entities.

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