Strategy of development of innovative clusters in Silesia regional economy

by

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Abstract:

In the study Author investigate the principal factors for regional innovative clusters on the base of large scales technology companies from Silesian region. Author determine that the priority task of strategic planning of regional innovative system is search and balance between objective, design, process and environmental characteristic of clusters as a whole and its organization participants. Also, in the article are presented the results of science and technological policy of Polish regional. It is know, that Silesian area scientist carry out fundamental and applied researches on major directions of modern science, scientific schools of a world level were create. It has researched the strategy of development of innovative activity Silesian region.

Keywords

Science, Technology, Policy, Innovation, Infrastructure, Intellectual Property, Cluster,

Main text.

At the present time the Silesian Region is a large centre of science in Poland and Central West Europe having advanced research base and high quality scientific staff. Wroclaw scientists carry out fundamental and applied researches on major directions of modern science, scientific schools of a world level were created[1]. Specially: University of Technology, Business of Incubators, etc. The science and technology infrastructure of Poland includes

[1] See: Dolnośląska Platforma Promocji Przedsiębiorczości Akademickiej, *Innowacje w sektorze TECHNO,* Wyd. Wydawnictwo Europa, Wrocław 2011,

more than 450 institutions of academic, university and industry researches. About 30 000 persons are engaged in the research sphere[2].

The priorities of development science and technology of the Silesian Region are aimed in view of priorities of economic and social development of Poland and provide creation and development of advanced technologies ensuring manufacture of import – substituting, competitive production in Poland, pursuing fundamental researches on critical scientific directions in the context of advanced trends of development of the European science[3].

A principle has been developed[4], know from the world experience, of management of scientific and technical and innovative activity. The system, accepted in Silesian Region, of state support to fundamental and applied researches as state orders, as well as a system of grants on pursuing innovative development works assumes orientation on final scientific and technological results, stimulation of competition if intellectual production, as well as mining the responsibility of the participants of scientific and technical and innovative activity for results of work and targeted use of the public funds.

The support is rendered, including financial and material resources, of not certain establishments of science and organizational structures, but concrete programs and projects, passed state expert evaluation. Such state support is in the form of stimulation of science, technology and innovations by economic methods, active use of market mechanisms of regulation relation in scientific and technical sphere, creation of condition for development competitiveness and entrepreneurship in scientific and innovative sphere[5]. In Silesian region scientific and technical alliances for financing applied scientific and technological development have been created within the framework of priority directions of economic and social development of the EU countries allowing to carry out these development works combining the use of budget resources, as well as share means of branches and regions,

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[2] See: European Cluster Observatory: www.clusterobservatory.eu.,

[3] See: Sölvell Ö., Lindqvist G., Ketels C., *The Cluster Initiative Greenbook*, August 2003, Stockholm 2003.

[4] M. E. Porter, *The Cluster and Competition: New Agenda for Companies, Government and Institutions*, MA: Harvard Business Review Books, 1998,

[5] See: European Commission, Innbarometer on cluster' s role in facilitating innovation in Europe. Analytical Report., Eurobarometer 2006, and European Commission, Innovation Clusters in Europe, A statistical analysis and overview of current policy support, DG Enterprise and Industry Report, 2007, also OECD, Globalizations and Regional Economies, OECD Reviews of Regional Innovation, 2007,

enterprises and organizations interest in result of development works for solution of problems set forth by them.

The Silesian region policy,

In Silesian region mechanism of realization of scientific and technical and innovative activity based on program – targeted principle and ensuring a high degree of sustainability on the chain "fundamental investigation applied researches – innovation projects" has been created and realized[6]. The realization of powerful structural, investment and innovative policy in the simultaneous use of methods and stimulus of market economy is one of major priorities of state scientific and technical policy, realized in the Silesian region.

Silesian region for the period of its independence has concluded about 300 interoperations agreements on cooperation in the fields of science and technology. Development of international scientific and technical links is stipulated on one hand, by necessity of support of scientific research carried out in the EU country, and technological development works, creation of favourable conditions for brining of Silesian region to the world scientific and technical community for coincidence with global integration process; on the other hand – securing national interest, first of intellectual property, rights and interests of the scientists abroad[7].

The active and full access of Silesian region to the EU exchange of high technologies, is integration in EU countries economic system is an effective tool of achievement of the major national purposes[8]. At the beginning 21st century globalization of scientific, technical and innovative activity becomes extremely important and priority one in the foreign economic policy of our state.

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6 See: the material of the II meeting in Wroclaw 2011 *of Innovative in sector TECHNO*, Dolnośląska Platforma promocji Przedsiębiorczości Akademickiej, Wyd. Wydawnictwo Europa, Wrocław 2011,

7 See: material Swen Stręk: *Wrocławskie Centrum Badań EIT + Sp. z o.o., [*In:] Dolnośląska Platforma promocji Przedsiębiorczości Akademickiej, Wyd. Wydawnictwo Europa, Wrocław 2011, pp. 4,

8 See: The European Cluster Memorandum, Promoting European Innovation through Clusters: An Agenda for Policy Action, January 2008,

The strategy of development of Silesian region on Polish area is focused on following priorities[9]:

a. liberalization in economic life, state and public construction in Poland,
b. future spiritual updating of the society,
c. sustainable, permanent growth of welfare of people,
d. strengthening social protection of population,
e. structural transformations in economy,
f. provision of stability, international and civil consent in the society, territorial integrity of the EU zone,

The Silesian region is in favourable position in Polish market space as its basic competitive advantage is the high potential of natural resources. Additional investment incomes from realization of available resource it is possible to direct on development innovative clusters, such as a science, introduction of scientific achievements and preparation of qualified personnel[10]. On the one hand raw orientation of the Silesian region economy allows to provide its competitiveness in EU space in the conditions of deficit of power resources, and on the other hand, exhausting the given kind of resources and extensive pumping out of stocks of an open source (innovative company of science and technical) and/or open innovation (internet assets) company of EU can provide economic well-being of nations only in short term prospect. As to the remote prospects here on the foreground there should be a capability of economy of Silesian region to became one of prime vendors of innovative decisions.

To modern economic systems of Silesian region there is a lack of innovative activity of its subjects, a fragmentariness and unsystematic character of management at big clusters. For realization of innovative activity it is necessary the cluster approach in a management. The most successful clusters are formed there where "break" in the field of techniques and the production technology with the subsequent exit on new "market niches" is performed or expected. Thereupon, uniform strategy of the country should be based on use of cluster approach for forming and adjustment if the national innovative programs on the basis of poles of innovative growth in profile for regional economy cluster including in technology complex,

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9 See: Towards world-class clusters in the European Union: Implementing the broad-based innovation strategy, COM(2008) 652, Brussels 2008,

10 See: Hołub-Iwan J., Małachowska M., *Rozwój klastrów w Polsce*, Szczecin 2008, and INNO-Policy Trendchart: http://www.proinno-europe.eu, also in European Innovation Scoreboard. http://www.proinno-europe.eu.

and also to implement system associability resources and mechanisms of stimulation of innovations of a pas macro – micro level that initiates the given research, determines its urgency.

The main research problems to be discussed consists in the theoretical justification and development of methodical approaches to forming of strategic development economic clusters for large technology complex in the conditions of forming of national innovative system[11]. Realization of the given purpose assumes the decision about the following issues:

1. research of theoretical bases of essence and the maintenance of forming the Silesian cluster economy taking into account experience of the foreign countries EU,
2. to refine concept "innovative economic cluster" in a context of objective economic processes and innovative technological breaks in development of an technology complex,
3. to justify and to systematize stages of forming innovative economic cluster in technology complex as catalyst of modern Polish economy of innovative type,
4. research processes of integration of the enterprises of technology industry with the research organization in innovative activity,
5. to precise problems of forming innovative economic cluster on the basis of the enterprises of technology industry,
6. to justify strategy of innovative economic development technology clusters,
7. to justify necessity of forming innovative cluster culture as result of self – organizing of social interrelations with essential support from the state,
8. let us make here some conclusions for the above research. The modern theory of economic one of prime vendors of innovative decisions.

The points of view existing in the economic literature for cluster can be divided into concept conditionally on two groups[12]: authors who pay much attention geographical component of

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11 See: Maastricht Economic and Social Research and training centre on Innovation and Technology, European Regional Innovation Scoreboard 2006, and Trendchart Innovation Policy in Europe 2006: http://www.proinno-europe.eu, also: *Towards world-class clusters in the European Union*, op. cit. COM(2008) 652, Brussels 2008.
Cluster policy in Europe. Europe Innova Cluster Mapping Project, Oxford Research AS, 2008,

12 See: Wennberg, K. & Lindqvist, G., *How do entrepreneurs in clusters contribute to economic growth?*, SSE/EFI Working Paper Series in Business Administration, No 2008:3, Stockholm School of Economics, Stockholm 2008,

cluster and in the second, which considers geographical component as insignificant. That is the concept of cluster is considered as regionally limited forms of economic activity in the related sectors, is usual adhered to those or other scientific institutions and closely cooperating with each other for strengthening of collective competitiveness. Or the concept of cluster is determined as vertical production chains, networks which are formed round head firms and are connected through mutual relations the buyer – supplier, the supplier – buyer, general channels of purchases or distributions.

Conclusion,

One of the most actual directions of the state support innovative clusters across the nation is development of the optimum legislation in the given industry, stimulating healthy competition development between the industry enterprises. The state support in regional scale (Silesian or the other in Poland), in author opinion, should occur by creation corresponding institutes playing a role of intermediaries between the generation of knowledge and large corporations, and forming necessary factors.

Forming of environmental strategy of cluster – process new enough for Silesian region economic theory and practice. As a method of an institutionalizing of innovative culture, i.e. transformation of its development into the organised, ordered process with certain structure of relation, behaviour rules, responsibility of participants, author offer the creation and support of development of corporate universities on the basis of large technology companies as canters of formation, occupational retraining and advanced training of employees of the companies – participants of regional production network.

To take above to consideration author forming for the future success in clusters cooperation the head “Tactical Plan to intellectual property (IP) “ for ***Academy to Business (A2B)***”:

1. realistic assessment of the projects - thorough describing the idea, the drafting business of plans, detailed analysing products in terms of the current and future state of the market,
2. choice of the baulk with doing it alone one's own, but establishing the business of the partner, are important: common goal which are a good of the company, a mutual confidence and a good agreement,

3. exploiting abilities of academic colleges, choice of helpful lectures from at university, undergoing practice, trainings, using the help of academic business incubators and technology transfer centres,
4. determining the target group of customers, proper marketing and talking to the customer with language of his benefit,
5. the flexibility and the verification of the offer through reality - taking into account needs of customers and the market demand,
6. caring for the financial liquidity - using funding partially of different kind, of EU programs, but about the uncomplicated formal side, drawing up a plan to possible emergencies,
7. investing, the good situation in the company should induce for investing money in the sustainable development of the business,
8. taking the individual responsibility behind the situation of the business - the success only depends and exclusively from founders,
9. risking - one should take new challenges but at the scrupulous risk assessment,
10. awareness of heavy responsibility, hard work, being consistent and persistent.

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