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On preparation of Poland's regions to knowledge-based economy

by

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Abstract

Poland is in a phase of preparing itself to the European Union Membership by way of intensifying negotiation process and making necessary adjustments in the law and structures. In this context, Poland is struggling to attain the level of readiness to use Structural Funds. Apart from legal and institutional accession requirements, Poland must make an effort to transfer from the middle income economy to the innovation-based economy, to participate in the European Union policy oriented to enhancing its competitiveness.

The objective of this contribution here is to analyse the ability of existing regions in Poland (NUTS2) to fulfil requirements which set the ground to create regions based on the knowledge-for-development premise: institutional and economic environment for the free flow of knowledge, ITC promotion and encouragement of innovation and entrepreneurship. It will be seen to what extent the educated and skilled population in selected regions can create, share and use knowledge. Finally, it will discuss networks of research institutions, universities and industry (particularly SMEs clusters), to ascertain whether they are ready to adopt national and international knowledge and create the knowledge of their own.

1. Introduction

The economic base of innovation is principally learning, and innovation as a public policy, together with respective policies for science and technology, has always been aimed at creating and diffusing knowledge in the first place. In recent years, learning and knowledge have attracted increasing attention and knowledge-intensive industries are now at the core of growth. It is commonly believed that we are now entering a new type of knowledge-driven economy, or even a completely new form of 'knowledgeable society'.

It is the principal objective of the paper herein to study in detail a selection of issues involved in the concept of knowledge-driven economy, or learning economy, specifically at the regional level in Poland, and, subsequently, justify an idea that the knowledge-driven economy at a regional level, as the example of pre-maturely developed innovative regions would show, need first to be referred to existing high-technology industries and start with the development of inter-institutional relations. Such an approach is valid perhaps for all the Candidate Countries which, according to plentiful statistics, are having low innovativeness of their economies.

At the beginning, we would pose a question of what the 'knowledge-driven economy' is. The OECD defines the knowledge based economies in very general terms, as "those which are directly based on the production, distribution and use of knowledge and information"¹. Albeit the notion of "knowledge-driven economy", is generally nothing new – economy has strictly been related to the use of knowledge ever since - today this notion has a special quality due to the dynamism with which knowledge is produced, diffused and assimilated. The problem is about the existence of critical innovative base, good enough to be a part of this process. We argue that potential development of a knowledge-driven economy at the regional level is directly related to the existing level of innovativeness of the regional economy and the capacity of R&D absorption in an industry sector. Apart from that, there is a problem of expected absorption of resources from innovation-support financial institutions.

In our opinion, regions in Poland regarded as low innovative, though, paradoxically, with sufficient number of innovation-oriented offices around, will have to create the

¹ OECD, The Knowledge Based Economy, OECD/GD (96) 1U2, p.7

network of co-operating institutions as a prerequisite of knowledge based regions (Fig. 1), the arrows indicate inward and outward direction the flow of knowledge. Żóltowski and Michowska (2002) presented a list of necessary interventions which are substantial for creating learning regions in Poland, among them cluster-building, developing programmes teaching how to learn, developing and mobilising regional/local potential towards networking of existing subsystems , enhancing an overall community potential to be creative. All these postulates are deeply rooted in socio-economic problem-solving methodology broadly applied in the European Union.

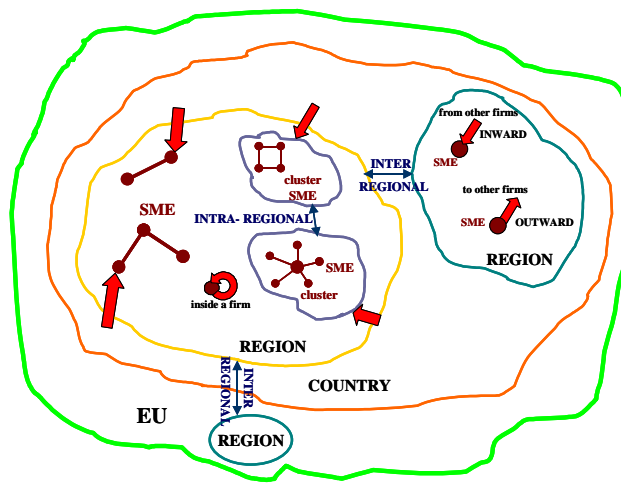


Fig. 1 The advanced inter-institutional relations in Poland.

2. A level of innovativeness in Poland

2.1. The innovativeness measures

The innovativeness in Poland's economy, including the application of Information Technology to business and the surrounding areas, has a strong and positive impact on productivity and quality as well. According to the UNIDO (United Nations Industry Development Organization) experts, CEE countries show fairly low productivity, not to exceed 20% the level reached by the European Union member states. In Poland alone, relevant research has been done occasionally, still the findings are to the effect that the productivity of Poland's economy is low.

A major instrument to gauge the degree of innovation by country is an innovative coefficient. It indicates the proportion of innovators in a given group of enterprises which has at least once in three years implemented an innovation. For Poland, the figure was relatively low 16.9% for 1998 – 2000, whereas for 1994-1996 it was 37.6% and for 1997-1998 – 28.9%. In 2000, for the first time in 10 years, Poland showed a direct fall in spending on innovation in industry. The figure was almost 20% down on 1999 (2.2 bln PLN vs. 15.2 bln PLN). The number of patents pending per 10 thousand members of population, so-called “inventiveness rate,” is widely thought of as a major trend indicator for innovation processes. In Poland, the inventiveness rate went steadily down from 1.4 in 1989 to 0.6 in 1996, then leveled off and has remained so until today. In 1998, the OECD average was 6.0, the EU figure stood at 2.6.

Among few indicators which rank Poland higher than the EU average is the relation of employment in the sector producing medium and high technologically-advanced output to the total employment figure, which is 7.54% and 6.29%² respectively. However, that value for other candidate countries of Czech Republic, Slovenia and Hungary is the average of 2 percentage points up.

Another indicator higher for Poland than the EU average is the proportion of spending on innovation to total spending in the manufacturing sector. In Poland it stands at 4.1% vs. 3.41% in the EU.

Numerous measures have been taken in Poland in an effort to build an information society. The ePolska project under the eEurope+ is in progress. Still, there remains a lot to be done. Among other candidate countries, except for Cyprus, Poland has the lowest statistics for the number of computers per 1 thousand population, which is slightly above 60³. The major obstacle to expanding services based on Information Technology is high cost of access to the Internet.

Investment of Venture Capitals in proportion to the GNP ranks Poland fairly high, yet merely 40% of that investment go to the sector of advanced technologies. The ratio of VC investment in technology business to the GNP was 0.045%⁴ in 1999, half as big as

² “Innovation policy issues in six candidate countries: the challenges”, DG for Enterprise, Luxemburg 2001, p. 83.

³ “Innovation policy issues in six candidate countries: the challenges”, DG for Enterprise, Luxemburg 2001, p. 80

⁴ “Innovation policy issues in six candidate countries: the challenges”, DG for Enterprise, Luxemburg 2001, p. 83.

the EU average. It is to Poland's disadvantage that VC investment is mostly aimed at large projects.

In Poland, similarly to EU Member States, services sector is much less prone to implement innovative solutions than industry sector. At the that percentage figure in Poland was only 16% against 40% in the EU.

A dramatic drop in the number of enterprises likely to implement/introduce innovative solutions has been observed. Recently, only 21,4% surveyed companies were intended to implement any innovation, whereas in years 1994-1996, the figure was 40%. In the small enterprise category this number decreased from 20% to 15,9%, in medium-sized from 35% to 26,7%.

Innovativeness of Polish enterprises, as viewed from the aspect novelty degree, is also low compared to the Member States. At the end of the 90s, this stood at merely 1,9%. For only 14% of them, there were novelty on domestic scale, the rest on local one.

Institutional infrastructure in support of innovation is in Poland moderately well-developed but, to a great extent, unevenly distributed by region. It is composed of higher education establishments, PAN (Polish Academy of Sciences) institutions, research and development centers, the institutional networks of cross-regional make-up, regional establishments: technology transfer centers, technology parks, technology-bound incubators, patent agents oriented to technology transfer and the protection of intellectual property.

A vital role in support of innovation is to be played by centres of innovation and entrepreneurship. By the end of 2000, 266 autonomous centres were listed as support institutions⁵, representing:

- 142 training and consultancy centers,
- 20 centres for technology and data transfer,
- 57 local loanable and security funds,
- 44 incubators and technology centres,
- 3 technology parks.

The number of centers of innovation and entrepreneurship has been steadily growing since 1990 when 27 such entities were identified. The largest growth happened in 1993 – 1996, which was due to involvement in numerous support programmes financed by

domestic and foreign backers to pursue expansion of the infrastructure for entrepreneurship and technology transfer in Poland. In 2001, the number remained roughly steady (a handful of new loanable and security funds started).

Despite, Poland has prepared a governmental programme⁶ concerning innovative policy, and it has been well received by the European Commission, it is financial shortage that prevent their practical development. That makes Polish lag behind when it comes to innovativeness.

2. 2 The SWOT analysis of Poland's innovation system

Strengths

- initiatives to start-up support start-up companies' formation,
- existence of instruments to reduce the risks of innovation,
- increasingly better position of Innovation Relay Centres and their impact on enterprises,
- SMEs based on advanced technologies already in business,
- large number of support institutions serving innovation-bound activity (consultancy and training centers, technology transfer units, incubators, loanable and security funds, research and development centers, etc.) involved in a variety of operational structures to that effect.

Weaknesses

- underdeveloped financial institutions to support innovation (difficult access to capital),
- unwillingness of entrepreneurs to take risks ensuing from the implementation/introduction of innovations,
- inertia-ridden attitude of R&D institutions towards commercialization of their output,
- relatively weak relation between R&D institutions and businesses,
- difficult financial position of businesses at large and SMEs in particular,

⁵ "Poland 2001 - Report Industry 2001", Ministry of Economy, Warsaw 2001, p. 87.

⁶ "Enhancement of innovativeness of Polish economy till the year 2006", adopted by the Council of Ministers Cabinet on 11 July 2000.

- inadequate and inflexible educational system in regard to promotion of innovative attitudes at all levels of public education,
- insufficient diffusion of techniques for innovation quality management,
- strong domination of short-term objectives over medium and long-term in business management,
- difficulty in obtaining information concerning high technologies and newest methods of management and organization,
- inadequate use of the potential support institutions offer.

Opportunities

- growing sector of innovative SMEs, principally by the acquisition of intangible technology assets,
- dynamic growth of interest in improving skills,
- direct foreign investment in advanced technology,
- numerous market niches in a variety of sectors of economy,
- access to other countries' achievements and expertise in the domain of innovation (within European Research Area).

Threats

- influx of ready R&D solutions from abroad to the detriment of domestic activity,
- growing competition from foreign suppliers of technologically-advanced products and services,
- low productivity of businesses due to relatively low utilization of IT,
- relatively low engagement of private sector in financial support of R&D sector,
- underestimation of Human Resources as viewed from the aspect of businesses' innovativeness,
- Venture Capital preference for big projects,
- Absence of a strong institutional leader involved in coordination of national innovation system.

Foreign Direct Investment (FDI) vs. supporting knowledge based regions in Poland

Central and Eastern Europe remains one of the world's most attractive investment sites. According to the UN Economic Commission for Europe, this region attracted 27.9 bln. USD in capital investment last year, 15.3 bln USD of which went to five Central Europe Countries: Czech Republic, Hungary, Poland, Slovakia and Slovenia. Central European share of domestic direct investment is also high – 16.2 bln (Poland: 6.9 bln USD)⁷. The question arises, to what extent the activity of international enterprises Borenstein, J., de Gregorio J. Lee.(1998), interact with the regional diffusion of knowledge. The study performed by M. A. Weresa, in which Polish capital-based firms and firms based on foreign investment are juxtaposed, shows that firms based on foreign investment do not present appropriate R&D intensity in Poland. Therefore, the "imported knowledge" would play an important role in creating knowledge-based regions. The empirical study carried by A. Cieřlik (2002) revealed that, even though direct foreign investment might be regarded as one of the instruments of regional policy and a stimulus for knowledge economy, the territorial distribution of special economic zones, whose purpose is to attract investors, does not seem to favour reduction of differences in the development of Polish regions.

3. Regional policy in Poland

Regional policy is the most important policy to pursue in Poland and other candidate countries and must be seen not only in the context of administrative reform of the country, but also in view of economic and social development necessary to integrate into the European Union. The regional policy, as based on experience of the European Union Member States, is oriented not only to support the weakest regions, but also to support actions towards increasing innovativeness and efficiency of the invested resources. The necessity to switch from the policy based on support for selected sectors of the economy, and to develop instead a modern regional policy in Poland is now widely understood. The models for regional development in the country are analysed by many researchers Broszkiewicz (1996). Another instance is a book by T. Markowski

⁷ "Once-communist world marches to its own rhythm" Financial Times, 17 May 2002.

(1996) who postulates support for the increase of the regions' competitiveness. The main concern of the research effort in hand is to enhance efficacy of Polish pro-innovative structures in their struggle to ensure compatibility with the EU counterparts and select means which could serve this purpose. It may be considered as the emergence of what might be called the "economy as a network," independent from high administrative and political level.

The level of innovativeness of regions of Poland is much varied. However, since 2001 the self-government authorities paid much more attention to the importance of innovativeness in view of the regions' competitiveness. Five of the sixteen of Polish regions have obtained support within RIS/RITTS projects to prepare innovative strategies. Among them, there is Warminsko-Mazurskie which belongs to the regions of the highest unemployment rate. These initiatives are very important and may well serve as evidence that the innovation issue has become a part of political approach at the regional level.

4. Administrative reform: goals and implementation – the base for creating regional knowledge based economy

Pursuant to the Constitution of the Republic of Poland of 1997, a commune, named **gmina**, is a basic self-government unit. The process of regionalization of Poland is provided for by the Constitution which says *Other [than gminas] units of regional and/or local self-government shall be specified by a relevant law/statute*".

First step in the territorial reform was taken in 1990 when local self-governments – gminas⁸- came into being. Further reform of decentralization and deconcentration, effected in 1999, continued with fundamental reforms of the transformation period. As a result, at each level of territorial make-up of the country, there is now a territorial self-government.

In 1998, the Parliament adopted laws on self-governments above the gmina – districts named **poviats**⁹ and provinces called **self-government of voivodship**¹⁰, thus having introduced a new system of public administration. Due to this reform, the executive

⁸ Law of 8 March 1990 on self-government of gmina.

⁹ Law of 5 June on self-government of poviats.

power of government was shared among self-government units¹¹ (councils) on regional level.

The institution of voivode performs a duty of a government representative and the voivodship executive board, headed by the Marshal, has an executive power on regional level. Sejmik - a regional parliament – does the programming and controlling of regional policies.

At the local level (poviats and gminas), there are local councils – a legislative power - and executive boards. The latter carry resolutions taken by the councils.

Final decision concerning the new administrative division of the territory of Poland, as well as the number of self-government units, had been deeply discussed by political powers and were subject to political negotiations until they came true. These issues are of vital importance from political point of view, as regional policy has become an integral component of social–economic policy of the state. Now, the most important decisions concerning regional policy are in large part delegated to regional public authorities.

In today's Poland, there are 16 self-governing voivodships at the regional level of administration, 380 poviats (including 65 towns being poviats themselves) and 2489 gminas Żebrowska-Cielek (2001).



Fig. 2 The administrative division of Poland.

¹⁰ Law of 5 June 1998 on self-government of voivodship.

¹¹ The self-government units are: voivodships, poviats and gminas (against the law of 1990 on gminas).

The central government of Poland is in charge of creation and coordination of state regional policy in accordance with the Law of 12 May 2000 on rules of regional development support. The National Strategy of Regional Development (NSRD) 2001-2006¹² was prepared at the Ministry level and defines the objectives and priorities of regional policy in Poland (taking account of regional development strategies), as well as lays down rules for the selection of support policies.

Each self-government at the voivodship level sets out the regional development policy which is out into practice via voivodship programmes. To conduct development policy of voivodship is their statutory obligation (inter-regional policy).

The state regional development policy in turn, supports projects specified in voivodship contracts¹³ and deriving from voivodship programmes.

Therefore, both the amount of resources as well as areas of support are in the first place referred to voivodships. This enables to coordinate the tasks undertaken within voivodship strategies and programmes by self-governments of voivodships, and provide for necessary flexibility in the allocation of resources on local level. Since the task of solving region-specific problems, such as unemployment, structural changes in agriculture or industrial restructuring has to be first taken up in the context of the region and not particular gminas or poviats.

It is to be said that delegation of competences and tasks to self-government has not been accompanied by adequate public finance legislation. Thus, the shortage of financial resources across regional Poland makes the voivodship contracts a main instrument of regional development policy. The self-government units do not operate sufficient funds to fulfil all their tasks and focus on the measures provided within voivodship programmes. Despite handing of competences down to the regions, the co-financing of voivodship contracts gives central government a strong position in defining measures of regional development policy. Impact of intra-regional policy, conducted by self-governments, remain then, due to lack of public funds in regions, much smaller than estimated.

¹² NSRD was adopted by the Council of Ministers on 28 December 2000.

¹³ The voivodship contract is a negotiated agreement between the self-government of voivodship and the Cabinet. Such an agreement comes up with a set of projects to receive support from the government, on the basis of The Support Programme and voivodship programmes.

When competences of self-government units are concerned, it needs to point at two kinds of competences those of self-governments themselves and the ones delegated by central government. Unfortunately, with some, responsibility is not clear. Either the subsidiary principle is breeched, or there is not clear enough definition of their) because of an imperfect legislative process). This undermines general transparency of the system.

The process of adaptation of Polish regional statistical instruments and procedures to the EU standards is well advanced, however the present classification has not been entirely compatible with the Eurostat. (The division of Poland's territory into NTS¹⁴ is presented in a map above). Again, the process of division of Poland's territory into NTS was very controversial, especially at NTS level 2 and NTS level 3 (eligibility for objective 1 of the EU regional policy is principally defined with reference to NUTS level 2, the scope for objective 2 is generally defined with reference to NUTS level 3).

Whereas NTS level 1 – territory of Poland and NTS level 2 – voivodship correspond with NUTS level 1 and NUTS level 2 respectively in regard to the number of population, with NTS level 3, sub-regions, including groups of poviats, the number of population exceeds the admissible sill. Thus, the division into NUTS level 3 requires a modification to be coherent with the EU principles concerning NUTS.

The prospect for the European Union accession and the opportunity to benefit from the Structural Funds and Cohesion Fund, determines, to some extent, spending of financial resources on the development projects. Effective use of Structural Funds and Cohesion Fund requires institutional and procedural adaptation. It concerns *inter alia*:

- Formation of Institutional system of programming, implementing, management and monitoring of Structural Funds and Cohesion Fund
- Long-term programming of budget spending
- Enhancement of self-government units revenues
- Creation of effective public - private partnership mechanism

¹⁴ NTS is Nomenclature of Territorial Units for Statistics, introduced in Poland, against the Regulation of the Council of Ministers of 13 July 2000.

Although self-government of voivodship has an exclusive title to creating regional development strategy, it is a *de facto* petitioner soliciting for centrally-cumulated funds to execute regional development projects. Therefore, the necessary decentralization of public funds should take place to make the self-government of voivodship the main actor of the regional policy.

In order to effectively run intra-regional policy, self-government units should obtain sufficient amount of funds. Thus, it is indispensable that the law on self-government revenues¹⁵ should be modified to enhance their income, as well as the law on self-government of voivodship and the law on rules of regional development support, to establish a coherent financial system. For now, difficult position of public finances makes it impossible to transfer funds from state budget to self-government. Simultaneously, a consolidation of public finances is required to enhance the budgets (state and self-government) and cut down purpose funds and funds of governmental agencies.

Tiny amount of funds in regions, in the face of large amounts for regional policy expected from the EU but available only on co-financing principle, may make it extremely difficult to have the latter absorbed. Decentralization of public funds is then the next, and necessary, step of decentralization of competencies. First, a new part of budget should be allocated – regional policy – under two headings of respective state regional policy and regional development support for regions. Then rules defining how to use the funds should be applied.

Furthermore, clear definition specifying the scope for intra-regional policy should prevent potential competence conflicts between government administration and self-governments, and make responsibility for certain measures transparent. In case of coalition government (there is one in operation in Poland at the moment), this issue is very important. Besides, further definition of competencies across self-government levels has to be entirely coherent with subsidiary principle and the unitary character of the state.

¹⁵ Law of 28 November 1998 on the revenues of self-government units.

5. Efforts to create strategies for regional development with an emphasis placed of the promotion of knowledge-based economy.

As mentioned above, in years 1998-99, Poland effected the comprehensive reform of regional and local administration to have a system similar to the systems existing in the European Union countries. As the system is based on the NUTS 2-size regions, competencies of the state and regional authorities to develop S/TD, innovation infrastructure and innovation policies in Poland are basically similar to the standards in the European Union. The question of Polish regions' innovativeness is addressed in a series of official documents. Poland has prepared its Preliminary National Development Plan which is related to the series of National Strategies: (National Strategy for Regional Development, National Strategy for Employment and Human Resources Development, National Strategy for Agriculture and Rural Areas Development, National Strategy for Fisheries, National Strategy for Environmental and Natural Resources Protection and National Strategy for Transport Development). The regional self governments and the Voivodship Boards developed their own Voivodship Development Strategies, Voivodship Operational Programmes and Regional Innovation Strategies¹⁶. Currently, the National Development Plan and its Operational Programmes are being prepared in Poland. This document, together with the ex-ante evaluation (presently initiated), will form a platform for negotiating the Community Support Framework, to utilise the Structural Funds. Laying the foundation for innovativeness upturn' in regions is a part of the National Development Plan.

The National Strategy for Regional Development (NSRD) is designed to pursue mid-term goals of regional development in Poland. It determines what the central government's perception of voivodship programmes is in terms of goals, criteria of selection of support measures, and principles and criteria of financial support. It provides a good reference point to help appropriate funds, including foreign funds, endowed from the state budget, and suggest ways of their spending on the

¹⁶ The examples of these documents; „Strategy of the Wielkopolskie Voivodship Development” by the Board of the Wielkopolskie Voivodship – Zarząd Województwa Wielkopolskiego, Voivodship Operational Programme for Regional Development of Podkarpackie Region 2001-2006 (Wojewodzki Program Operacyjny Rozwoju Regionalnego Podkarpacia na lata 2001-2006) by Board of the Podkarpackie Voivodship - Zarząd Województwa Podkarpackiego, “Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodship” (Regionalna Staretegia Innowacji Województwa Kujawsko-Pomorskiego) by the Board of the Kujawsko-Pomorskie Voivodship – Zarząd Województwa Kujawsko-Pomorskiego

implementation of voivodship programs of regional development, cross-boarder cooperation programs and pilot programs in the field of regional development, all to be covered by voivodship contracts.

The NSRD consists of five constituent parts: the character and functions of the NSRD, the circumstances surrounding it, the objectives and strategic priorities for the regional growth policy, the methods and instruments of support, the guidelines on organization and monitoring of the policy in hand.

Following the administration reform, the NSRD has established itself as a significant platform for the dialogue of central government with regional (voivodship) councils on the regional policy of the state within the scope of strategic growth planning in particular regions (intraregional policy). Given that, the NSRD functions may be viewed as ones which are referred to the work of Szlachta (1998):

- enable operationalisation of the regional growth objectives as defined in the long-term planning documents by central government,
- warrant consistency of the regional growth policy with the economic policy and particular sectors policies; on the operational level included,
- provide institutional framework for support by central government and its agencies of provincial (voivodship) councils as primary promoters of the regional growth policy,
- provide to businesses information helpful to make decision on funds allocation or investment.

Among circumstances conditioning the NSRR, the following are given special attention: global trends, trends resulting from European integration, political and administrative, macroeconomic and structural, finally, the ones caused by inter-regional inequalities in progress and development or economy transformation.

The strategic aims and objectives are:

- extension and modernization of infrastructure with a view to increasing competitiveness of the regions. This will be achieved by way of extension and modernization of transport and logistics network, extension of telecommunications and data transmission systems, upgrading the infrastructure

for natural environment protection and promoting metropolitan function of the biggest cities and urban areas,

- restructuring and diversification of the regions' economic base. It will be achieved by: promoting growth of small and medium-sized towns in predominantly farming regions, fostering SME sector, improving investment value of the regions, encouraging tourism,
- upgrading Human Resources: building up the strength of secondary and higher education in the regions, fostering vocational training and lifelong acquisition of skills alongside restructuring of regional economies and technological advancement, cultivating entrepreneurship in the regions, training resources for public sector, stepping up professional, inter-sector and spatial mobility of the labour force,
- supporting regions in need of encouragement or threatened with marginalization: stimulation of economic growth in rural areas, areas of post-state-run farming and run- down towns of degraded industry, inspiring activity amongst urban population threatened with socio-economic marginalization,
- promotion of international contact of the regions: cross-border cooperation, direct relations of provinces of Poland (voivodships) with regions across Europe, acquiring personnel and building up institutional resources to facilitate good, based on partnership, international relations of Polish regions with foreign counterparts.

The potential threats to the NSRD are: slow progression on an effective system of coordination for spending of financial resources handled by different ministers, insufficient financial resources handled by the minister responsible for regional development, delays in the making of a programming system for the construction, monitoring, control and evaluation of the regional development policy, resulting in the incapability to comply with the preliminary conditions of application for the pre-accession and structural funds, lack of progress in further decentralisation of public

finances to increase incomes of the territorial self-governments. This may result in scaling down tasks and co-financing of regional development programmes.

Creation of favorable conditions for the growth of innovation as a prerequisite for the growth of Poland's economy at large is addressed by the state's strategic documents which establish necessary measures that need to be taken before Poland's accession to the European Union and proceed further until 2006, that is to say, in the presupposed first years of the EU membership. One of major programmes to further this end is called "Increasing Innovativeness of Poland's Economy by 2006". It deals with potential actions of organizational and institutional nature, as well as technology transfer, in search of mechanisms and structures to foster innovation, inspire desirable attitudes towards it and seek ways of stepping up efficiency in the development of state-of-the-art business solutions. Among others, it is stimulation of new innovative enterprises, as well as expansion of innovation's infrastructure: industrial parks, technology parks, networks for regional centers of technology transfer, education designed for innovative entrepreneurship and promotion of Information Technology.

First step towards the full-scale implementation of actions under the above mentioned programme was to include it, in part, into the Sector Operational Programme of the Preliminary National Development Plan – Supporting Competitiveness of the Economy. The programme in hand will be executed under the venture of "Phare Social and Economic Cohesion 2002". Actions initiated under the Preliminary National Development Plan will be taken further within the scope of the Sector Operational Programme – Raising Competitiveness – of the National Development Plan.

A vital importance and necessity of effective undertakings in the field of innovativeness of the economy is also emphasized by the explication of economic strategy titled "Entrepreneurship – Development – Labour", which was adopted by Polish Government the 29th January 2002.

It is a challenge for Poland to switch from an economy of low productivity accompanied by low cost to an economy oriented to generating added value, built on a foundation of knowledge and quality.

With Poland's soon accession to the EU, there is a need for yet more vigorous advancement of innovation in its economy. Firstly, to attain higher competitiveness, secondly, to be part of a larger effort under the priorities of the EU innovation policy.

It is essential that Poland be an active participant in the European Research Area. Numerous well-coordinated projects continually taken up under that heading will lend Poland access to knowledge and European experience in innovation policy, as well as tools to further that end.

An important issue here is to progress in analyzing the level of innovativeness in the economy by applying the tool vastly used in the EU, The Innovation Scoreboard under the European Trend Chart on Innovation. With this, it is possible to measure the degree of innovativeness in the EU by country and identify problem areas where intervention is needed. By now, Poland has mustered ten of the seventeen basic parameters.

An excellent example of intra-regional policy, and methodology, to pursue under a Voivodship Contract, is the Strategy for Silesian Voivodship Development 2000-2015; a long term strategy involving development of technologies, innovation and other activities in the realms of science (the 4-th Strategic Area Olbrycht (2002)). The Priority E: Enhancement of Innovativeness and Competitiveness of Economy, specifically SMEs, is split into 5 strategic goals: development of economic power of SMEs, development of research and application of new technologies, enhancement of investment attractiveness of a region, modernisation of food-processing sector and enhancement of touristic (recreational) value of the region.

6. Conclusions

The contemporary history of Poland after 1989 can be considered mainly as transformation process from centrally planned to market economy, from strong centralisation towards regionalisation. The consecutive reforms allowed for preparation to deal with the European Union's structural policy. From the point of view of administration structure, involvement of subsidiarity principle, policy, governance, regions in Poland are prepared to fulfil conditions necessary for development of the knowledge-based economy. This issue is strongly incorporated into several "axes" of

the National Development Plan, as a basis to programme Poland's utilisation of Structural Funds (2004-2006), now being under construction. The question is also if Poland and other candidate countries aspiring to the EU membership will be able to absorb about 4 % of GDP allocated in the Structural Funds.

In our opinion, the principal problem lies in the inappropriate, critical innovativeness level of Polish regions, and enterprises in particular. The minimum level must be reached in order to implement knowledge-based economy principles. The phenomenon of creating clusters, as a loose business organisation, has proved to be a good solution to increasing innovativeness, thus preparedness of regions to implement knowledge-based economy. Because many of clusters established so far have good co-operation with regionally located research/education institutions, there is an important educational element.

Poland is at the beginning of the process of building knowledge-based economy. The actual conditions in Polish regions, the activity to develop knowledge-based economy strategies, the expected increase of innovativeness, and intensive preparation to utilise the Structural Funds for supporting implementation of knowledge-based economy in regions, demonstrate proper direction.

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