GOVERNANCE OF INNOVATION POLICY IN THE NEW MEMBER STATES

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1 Introduction

The governance capability in the area of innovation policy is crucial for the success in further design and implementation of publicly funded innovation related measures and their impact on the economy. Innovation governance incorporates a broad set of mechanisms, instruments and institutions in the field of R&D, education, and entrepreneurship. Adequate governance capability is essential for the successful adoption and implementation of EU influenced innovation instruments in the Member States. The effectiveness of influencing the innovation capabilities and behaviour of enterprises relies on the "governance" of these policies (EC, 2003a).

This has a special bearing also for the integration of the new Member States[2] (NMS) into the EU and their contribution towards achieving Lisbon strategy objectives. During the accession process to the EU the NMS have, through the use of pre-accession aid and direct participation to the Community programmes, transferred into local context several elements and instruments of EU designed innovation policy. A number of different mechanisms and instruments applied in the EU-15 to foster innovation were adopted by the NMS and introduced into an »innovation environment« that was very different from the one in the EU15 in regard to history, institutional set up, priority setting, interactions between actors. At the same time,

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[2] For the purpose of the present analysis the term new member states is used to denote ten Central and Eastern European countries: eight joined the EU in May 2004 (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia) while two of them became members in 2007 (Bulgaria, Romania). Even though these countries differ regarding the level of economic development, history, culture and location they nevertheless share common characteristics in regard of past institutional set up, R&D policy, business environment, etc. (Brundenius et al., 1999)

the governance mechanisms for the implementation of innovation policies were not in place at all or only modestly developed in these countries.

The analyses on how the NMS governed this transfer and how it affected their indigenous innovation policy developments is therefore beneficial, since it would shed light on the implementation process of innovation policies.

The principal objective of this paper is to explore and evaluate governance capability of NMS through a prism on innovation policy. The point of departure is the assumption that good governance also represents the ability of the country to identify good practice and policy from the EU (or elsewhere) and to transfer it in a way that takes into account specific local circumstances- not just copying but assimilating and adjusting to the local needs and capabilities. We attempt to assess whether the governance capability of NMS has been sufficient for the adoption of broad innovation policy measures of the EU15 and especially, for their efficient implementation. We also seek to reveal whether the Europeanization resulted in the neglect of creating of their own measures by the NMS, which could be more appropriate to the socio-economic environment of the NMS. Our main argument is that the particular needs and capabilities of NMS have to be efficiently integrated into the shaping of the innovation policy of the enlarged EU to enable NMS to participate as active partners, contributing to the good governance of innovation policy at the regional, national and EU-wide level. Sufficient governance capability would help support the business sector in raising R&D and innovation activity, thus raising the productivity and competitiveness and enable the catching up process of NMS.

2. Governance and innovation policy in theory

The importance of national innovation system and of a pro-active innovation policy is receiving increased attention at the national, EU and wider international level. Several developments in the theoretical field have had an important impact on innovation policy and the role of government. Among them, we can single out the concept of National System of Innovation (Lundvall, 1992; Freeman and Soete, 1997,

Nelson, 1993, see also Fagerberg et al, 2004), the "Triple Helix Model" of Etkovitz and Leydesdorff (2000) as well as the concept of national innovative capacity, introduced by Furman, Stern and Porter (2002). All have stimulated the governments in developed economies to take a more active role in facilitating and enhancing innovation by providing supporting environment for innovative activity of firms. Looking at the innovation capacity concept in more detail, we see that the authors identify three categories of determinants explaining the differences in innovative capacity of the countries. Common innovation infrastructure as a first of the categories captures the resources needed for innovation and includes country's cumulative technological sophistication, human capital and financial resources available for R&D activity, resource commitments and policy choices. The second category in national innovative capacity framework is the environment for innovation, specific to nation's industrial clusters. Quality of linkages between the latter and the common innovation infrastructure is the third category of the model. While the quality of innovation governance is important in all three categories, it is the quality of linkages, in particular governance capability in line with contemporary approach to innovation that may be seen as having the most significant influence.

Governance comprises "all those activities of social, political, and administrative actors that can be seen as purposeful efforts to guide, steer, control or manage sectors or facets of societies" (Kooiman, 1993). The World Bank (2005) defines national governance as "the set of traditions and institutions by which authority in a country is exercised." Governance recognises a capacity to get things done that does not rest solely on the power of government to command or use its authority. Preferably, the government should use its authority to steer and guide processes (Stoker, 1998). According to Stoker (1998), governance refers to a set of institutions and actors that are drawn from the government, but also from outside government. In fact, it is argued that the most important aspects of governance is the capacity of a country's institutions to implement and enforce public policies and to improve coordination of activities in the private sector (Ahrens, 2002). Governance is an interactive process involving various forms of partnerships, collaboration, competition and negotiation. It implicitly addresses the issue of accountability, lack of

transparency and representation, all of which may create weaknesses (OECD, 2005: 24). European Commission's White Paper on Governance (2001) sets out five principles that underpin good governance. They are: openness, participation, accountability, effectiveness and coherence. These are required for the sound management of public resources and essential in creating environment conducive to business, as well as a productive partnership between public and private sectors.

In the context of innovation governance, the European Commission (Innovation Tomorrow, 2002) calls for the governance system to reflect a novel approach to innovation, the so called "third generation" of innovation theory. Comprehensive "third generation" innovation policy assumes that government will be able to release the potential for innovation that is embedded in other sectors and policy domains. "In other words, it assumes that coherence may be achieved by ensuring cross-sectoral optimisation of the components of various sectors' innovation policy through co-ordination and integration." (OECD, 2005:9). Innovation policy needs to become an integrated dimension in all other (traditional) policies. Such policy spans horizontal as well as vertical boundaries of government in order to ensure that all areas that have impact on industry development and innovation activities are coordinated and integrated.

In practice, however, there are many obstacles to horizontality of innovation governance. Countries are often faced with a lack of strong political leadership, necessary to create common visions and a legitimate basis for joint agendas. This is coupled with a traditional high degree of departmentalisation in the administration, especially if mechanisms for inter service exchanges and consultation are not established. Even administration departments explicitly dealing with innovation too often still apply "linear model." In so doing, innovation policy is reduced to small unconnected measures that attempt to resolve SMEs' difficulties, venture capital provisions, intellectual property rights, clustering, etc. (OECD, 2005).

Besides being horizontal, successful governance must also ensure a coherent vertical dimension. The vertical interactions depict relationships between different levels of

government bodies, for example, between ministries and agencies or between European, national and regional administrations. Vertical interactions are of particular importance in a policy implementation phase. Ministries must communicate clearly to the innovation stakeholders with a wider message than just a narrow programme of calls for proposals.

Vertical coherence can often be disturbed by emerging multi-level governance in the innovation policy. EU, national and regional authorities have all relatively high competences as well as budgets in this field; however, their plans and actions are often not coordinated sufficiently (EC, 2006a: 81). In accordance with EU regional policy rules, the European Commission has to concede all implementation of structural funds to the regional authorities where the lack of administrative capabilities can hinder governance capacity. The same study also found that "in the vast majority of Member States much more could be done to improve policy coordination. In only a handful of countries is policy coordination (between national and regional authorities or between national policy makers and agencies in specific fields, or both) not considered a serious problem for developing a credible innovation policy" (EC, 2006a:30).

The increasing importance of governance stems from the new role of governments as facilitators and equal partners, rather than controllers of research and innovation systems. Furthermore, governments need to design and implement policies in increasingly complex, highly networked and multi-layer research and innovation systems that are continuously changing (EC, 2009).

3 Innovation capabilities of new member states

The introduction of market-oriented reforms in the NMS in the early 1990s put the emphasis of economic policy considerations on "mega" projects such as privatisation, liberalisation and deregulation. Although the pace and scope of these reforms differed among the NMS, they nevertheless geared all policy actions and institutional change towards the implementation of these reforms. The strengthening of the

innovative capacity of NMS such as investment in R&D, human capital and technology were delayed and slowly introduced into policy portfolio only after the end of the 1990s. Focus on knowledge and entrepreneurship-driven factors in upgrading the competitiveness of these countries came along only with the process of their integration to the EU. Within the framework of accession, the NMS had to undertake a number of innovation related activities; these introduced new mechanisms and institutional support that gradually improved their innovative capacity.

To reflect upon the innovation policy governance we carried two types of analyses: one quantitative, based on European Innovation Scoreboard results and a more qualitative, based on European Innovation Trendchart Annual Country reports. In order to assess the improvements of NMS innovative capacity and relate it to the EU level we rely on data of the European Innovation Scoreboard (EIS) that has been published annually since 2001 to track and benchmark the relative innovation performance of EU Member States. NMS were first introduced to EIS in 2002 although with deficient data that were not fully comparable[3]. Subsequent reports improved the coverage of indicators and data availability and introduced grouping of indicators thus enabling better capture of different dimensions of innovation capacity in member states[4]. For the EIS 2008, the methodology has been revised and the number of dimensions increased to 7 and grouped into 3 main blocks covering enablers, firm activities and outputs. The purpose of this revision is to have dimensions that bring together a set of related indicators to give a balanced assessment of the innovation performance in a particular dimension. At the same time, a stronger focus is given to services, non-technological aspects, and outputs of innovation.

[3] Data for some indicators in individual countries used different methodologies that resulted not only in limited comparability between countries but also in time series inconsistency for the same country. Improved data base for NMS provided by the EIS 2003 enabled the calculation of the Summary Innovation Index.

[4] European Innovation Scoreboard 2005 for example distinguishes five innovation categories (innovation drivers, knowledge creation, innovation & entrepreneurship, application and intellectual property) that are grouped into two major themes (innovation inputs and innovation outputs) (EIS, 2005: 7).

The overall innovative capacity for each individual country is approximated by a summary innovation index[5] (SII) composed of data for various innovation indicators[6] aggregated in line with different criteria allowing comparative empirical analysis. Table 1 gives an overview of SII scores for EU27 and individual NMS in the 2004-2008 period. First, all NMS have improved their innovation performance in the period observed, albeit at a different pace. Quite as expected, NMS with the largest gap in innovation performance in 2004 experienced the fastest growth and catching up with the EU27 average (e.g. Bulgaria. Latvia and Romania) Secondly, the ranking of individual NMS by summary innovation index didn't change between 2004 and 2008; top four and bottom three NMS maintained their initial position. This suggests that notwithstanding the progress achieved, a much longer period of time is required and coordinated efforts of all stakeholders of innovation policy are needed in order for the individual country to achieve a breakthrough. This reinforces the importance of innovation policy governance. Finally, all NMS have increased innovation performance relative to EU27 with the exception of Estonia, even though the latter remains the best performer among the NMS, followed closely by Slovenia. This further supports the fact that those countries which start out in the best position are also the ones which improve it the least.

[5] For the methodology of calculation of summary innovation index see (EIS, 2008).
[6] 30 indicators for seven dimensions (human resources, finance and support, firm investment, linkages&entrepreneurship, throughputs, innovators, economic effects)

Table 1: Summary innovation index (SII) by countries, 2004-2008

	2004	2005	2006	2007	2008	SII growth*	SII growth* relative to EU27
						2008/2004	2008/2004
EU27	**0,429**	**0,431**	**0,447**	**0,466**	**0,475**	**110,7**	**100,0**
BG	0,172	0,174	0,178	0,206	0,221	128,5	116,0
CZ	0,344	0,346	0,368	0,392	0,404	117,4	106,1
EE	0,413	0,409	0,421	0,443	0,454	109,9	99,3
LV	0,194	0,204	0,215	0,239	0,239	123,2	111,3
LT	0,264	0,273	0,287	0,294	0,294	111,4	100,6
HU	0,266	0,273	0,287	0,305	0,316	118,8	107,3
PL	0,264	0,272	0,282	0,293	0,305	115,5	104,3
RO	0,209	0,205	0,223	0,249	0,277	132,5	119,7
SI	0,388	0,393	0,412	0,429	0,446	114,9	103,8
SK	0,257	0,273	0,298	0,299	0,314	122,2	110,3

* in index numbers.

Source: European Innovation Scoreboard 2008.

The results presented reveal the catching-up pattern of the NMS in regard of innovative performance. However, from the point of view of assessing the speed of the catching-up process this picture is not sufficient. To check the efficiency of the catching-up process we took into account only the improvements in SII by the NMS relative to EU27 that were reflected in the increase of at least ten index points in the observed four year period (last column of Table 1). Considering this benchmark, the catching-up process remains valid only for four countries where the growth of SII exceeded the growth of EU27 SII by an arbitrarily selected margin. In other NMS catching-up in terms of innovation performance was rather weak.

Most recent data for individual dimensions of the innovation capacity (EIS 2008) show that the largest gap between the NMS and the EU average persists in the field

of patents, trademarks and designs, which on one hand reflects the capability of the business sector to generate new knowledge and on the other hand, the supportive institutional environment that encourages and facilitates IPR protection. The NMS still have a long way to go in shaping and implementing the appropriate policies in this field.

In the absence of longer data series for SII this short overview confirms that notwithstanding the progress achieved by the NMS in regard of innovation capacity, no major break-through was achieved. On one hand, this implies that building of the innovation capacity is a longer-term process. It requires accumulated efforts in improving innovation inputs that in the end result in better innovation outputs as well. On the other hand, having in mind the complexity of the innovative capacity building, the relatively modest performance of the NMS could suggest that the policy mix in the NMS for improving their innovative capacity was not adequate to address the major gaps in a sufficiently efficient way. This may be related to the deficiencies in governance of the innovation policy in the NMS. Governance has an important role to play in coordinating and balancing different innovation-related policies. Moreover, governance of the innovation policy has to take into consideration the specific features (legacy) of the national framework for innovation as well as institutional set-up developed at the EU level. We turn to the issue of innovation policy governance in the NMS in the next section.

4 Innovation policy: imitation, learning and adapting

European Innovation Trendchart Annual Country reports for the NMS[7] provided the basis for the appraisal of innovation governance capability during the recent period (2006- 2008). The reports include analyses of the innovation policy, trends in institutional and legal set-up, identification of the main challenges in the area of innovation policy and an assessment of the innovation governance. Looking at the

[7] All of the annual reports can be found on http://www.proinno-europe.eu/index.cfm?fuseaction=page.home

individual reports of NMS, significant similarities in evolution in the area of innovation policies can be observed (PRO-INNO, 2009).

The transition to market economy and especially the accession to EU and thus impact of European policies in the area of innovation and R&D - led NMS to pay more attention to the national innovation system in general and to the governance of innovation more specifically. Most of them have new institutional and the legal frameworks put in place along with white papers and innovation strategies. The countries have introduced numerous instruments and measures in support to innovation and R&D[8], mostly imitating the best practices seen in more developed "old" EU member countries. Gradually, there seems to be increased awareness building on the importance of innovation policies, stimulated in part by the practice of regular annual reporting on the implementation of Lisbon strategy. Another major avenue of impact, observed in all NMS, is the participation in the EU cohesion policy and ability to draw on the structural funds (SF). Since the financial perspective 2007-2013 stresses the promotion of R&D and innovation, most countries have designed specific measures in this area to be co-funded from the SF. Available new funding opportunities have allowed launching a number of new schemes as well as increasing the support under the existing measures. What the country reports reveal is again a high number of same or very similar innovation and R&D measures, suggesting that one can still talk mostly of an imitation strategy on behalf of the NMS.

In part this may be the result of low awareness of innovation policy among politicians. The consequence is still insufficient allocation of resources for the design of the support measures, which would not only assimilate the good practice of the more developed countries but be adapted to the specific weaknesses in own innovation environment. Some analysts call for an interactive, learning-based approach in building national innovation systems (Urblane et al., 2007). Underdeveloped governance capability is reflected in the lack of coordination of

[8] A detailed examination of measures, introduced by the NMS since 2003 show, that some have opted for rather broad measure and thus smaller number (like Slovakia – 5; Estonia 8) while other countries decided to design very specific measures addressing a specific innovation/ R&D community (Hungary - 31, Lithuania 30). Ibid.

policies within the government and poor understanding that policies must address the horizontal governance issue. Commonly observed is the need "to ensure consistency between innovation policy and research and technical development, ICT and education policies at national level, and coordination with the EU innovation policy (Bulgarian report, 2008, iv). One of the challenges for NMS is, "to simplify and reorganise the system of R&D and innovation governance in order to make it more efficient" (Czech report, 2008: iv). Reports found that "the coordination and capacity gaps in the system should be filled in (Estonian report 2008: iv), STI governance system and coordination should be enhanced (Hungarian report, 2008: iii)". The lack of any substantial progress in terms of policy coordination was found in Latvian 2008 report, while Lithuanian report found "attempts to improve policy coordination and implementation" (Lithuania, 2008: iii). Also identified was a need for "drawing policy implications from independent evaluations" (Poland, 2008: iii), as well as a "considerable room for government intervention in RTD and innovation policy areas (Slovakia, 2008: iii) and more systematic co-ordination between Ministries, dealing with innovation matters (Slovenian report, 2008).

The NMS fight with low level of R&D expenditure, especially in the business sector, an evaluation culture that still is underdeveloped and with low capacities in transferring research results into innovation. It seems that poorly developed cooperation between public R&D and business sector is also a common problem of innovation environment, often attributed to the mismatch in the incentive structures of these major players. This challenge could not be resolved by the newly formed bridging institutions, partly due to their novelty and lack of experience and partly due to the conflicting policies in other areas. The measures put in place so far have not yet caused the expected positive response among the business community. Also, frequent changes of these measures as well as frequent changes in organisational set-up and in the level of resources allocated to innovation policy, have not contributed to the formation of innovation-friendly environment.

The insufficiently developed governance capability can be seen in the introduction of overlapping policy schemes, insufficient transparency of the measures or of poor

adjustment of mechanisms transferred from other countries. In several cases, country reports pointed out significant discrepancies from the policy papers to the actual practice: while in various strategic papers innovation is highly praised, the public budget allocation seldom matches this praise. This too often results in the so called "implementation deficit", where several well-designed innovation support measures never become operational.

The national innovation systems are shaped by different stakeholders and develop in very country-specific manners taking account of socioeconomic characteristics of respective countries (OECD, 2004). In the case of NMS, the lack of experience and tradition in innovation governance seems to limit their ability to successfully integrate transferred EU policies to the national environment. At the current stage we can talk about the imitation of the policies with still insufficient learning process in the adaptation of the policies to the specific needs and capabilities of each individual country and its circumstances.

5. Policy implications for the governance of innovation policy

Governance in innovation policy is challenging because the innovation process itself is very complex. On the one hand, innovation is interconnected with other policy areas like research, education, internal market, etc., but on the other it remains important to distinct innovation policy from other policy areas to make sure that specific innovation issues are addressed in a good manner. (EU, 2006b: 65)

We see that both building the innovation capacity as well as governance capability requires a long-term effort, which needs to move beyond institutional build-up. The later is the first step only, which needs to be followed by creation of efficient policy mix, focused on the major gaps in innovative capacity. The coherence of innovation policy with all other relevant policies is a key imperative for positive results, along with high level of coordination both of policies and of different ministries and public agencies. Frequent changes in the institutional set-up, in policy orientations and in

responsibilities of different public agents, experienced in NMS, have often undermined their governance capability in innovation policy.

What a closer analysis of the governance capability reveals is that the coherence and coordination are much more demanding characteristics of governance capacity as initially believed. This is true for any policy and holds also for innovation policy. Attainment of governance capacity is a long-term process, and the complexities should not be underestimated.

We found that the Europeanization of innovation policies had several positive implications on the innovation policies in NMS, particularly in the area of awareness raising, transfer of innovation policy concepts and practices. So continuation of the projects like PRO- INNO, ERAWATCH or CREST - OMC working groups meetings[9], where policy makers are actively involved, is important. The benchmarking exercises and continuous monitoring and evaluation can contribute to faster development of governance capability and improved national innovation systems. What is still in the process of development is the capability to adjust the measures and instruments seen as good practices in other environments to own environment and circumstances. The latter is, however, one of the essential elements of good governance.

Country-specific factors (institutional set-up, structural characteristics, relations between stakeholders) are very important in innovative capacity building and accordingly also in shaping innovation policy and governing it at the national or EU level. The results presented may suggest that »one size fits all« approach is unlikely to be effective. Technology and innovation do not take place in isolation. They are social processes that rely on institutions and ideas. Institutions are the facilitators of

[9] The Open Method of Coordination was created as a new policy instrument to coordinate voluntarily Member States towards the achievement of the EU's Lisbon Strategy objectives. More on CREST – OMC see in *The Open Method of Coordination in Research Policy: Assessment and Recommendations*, *A Report from the Expert Group for the follow-up of the research aspects of the revised Lisbon strategy;* January 7th, 2009; *European Commission DG Research* ***http://ec.europa.eu/invest-in-research/pdf/download_en/eur_23874_texte_web.pdf*** .

innovation (de la Mothe, 2004: 535**).** And institutional arrangements are an important segment of innovation governance.

The analysis of the countries that were successful in the history in catching-up to technologically and economically more developed countries by leap-frogging certain development stages shows that catching up never was achieved without a conscious action of the government[10]. Along with a modern economy, a modern government with a vision and with efficient institutional environment is needed to enable a dynamic and qualitative economic and social development (Bučar and Stare, 2006). Somehow contradictory, often in NMS more problems arise from overzealous innovation policy and institutional building: trying to do too much at the same time with limited financial and human resources. This leads to the introduction of many instruments from different ministries and other government bodies, resulting in lack of coordination, poor transparency and often low efficiency of the policies. (Stare, Bučar, 2009). A more stable and transparent environment is favoured by business, especially SMEs, who have limited capacity to monitor the institutional developments and continuous introduction of new measures and instruments.

Overall, the development of governance capability in innovation policy would contribute to the catching up process of the NMS. The fact that NMS are still lagging behind can have long-term negative consequences for Europe as a whole. One of the prerequisites for convergence is that a more dynamic economic structure emerges based on innovation-led growth. Insufficient convergence in turn may result in a Europe of a two-tier or multi-tier economy (Radosevic, 2004) or to an even wider spread of "variable geometry"[11] than currently is the case. This, in the end, can have both political and economic negative consequences for EU.

[10] Freeman (1989) points out the complexity of such undertakings: The success of any country to catch-up within next decades depends crucially on their ability for institutional innovation, infrastructure, investment in education, S&T and last, but not least, on the international economic system.

[11] 'Variable-geometry' Europe is the term used to describe the idea of a method of differentiated integration which acknowledges that there are irreconcilable differences within the integration structure and therefore allows for a permanent separation between a group of Member States and a number of less developed integration units. http://europa.eu/scadplus/glossary/variable_geometry_europe_en.htm

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