

## INNO-Views Policy Workshop

# **Improving Governance in European Innovation Policy**

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***Background Paper***

Rev 04

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## Background

### Rationale

The conditions for policy-making have changed fundamentally as reflected in trends towards globalisation, shift towards the evolution of knowledge-based societies, multilevel policy networks, privatisation and increased stakeholder participation. International treaties and norms add new dimensions to the existing patterns of governance at European, national, regional and local levels. The distinction between private enterprise and public administration is increasingly permeable. The private sector has to deal with the incorporation of external effects in management and public authorities start to work with models from business administration. Current trends in national and international politics are important because they:

- influence the behaviour of businesses, markets and citizens;
- lead to an increasing number of linkages among different public policies, laws and regulations;
- produce complex political networks and multilevel policy frameworks;
- require more effective forms of cooperation, conflict resolution and public arbitration;
- need concerted and integrative approaches in policy implementation;
- determine the competences and steering processes among public administrations;
- require specific information on economic impacts and trade-offs;
- need evaluation of the combined policy results.

A framework of public policies and laws with coordinated aims, strategies and instruments is essential in order to overcome complex problems and develop more comprehensive solutions that correspond to the overall goal of sustained economic growth and employment. Taking cross policy sector impacts into account and approaching problems in a more integrative manner are key concepts for improving the effectiveness and efficiency of public policies, legislation and administrative decisions and activities.

The report on a workshop held at the occasion of the 30<sup>th</sup> anniversary of the Fraunhofer Institute for Systems and Innovation Research (ISI), Karlsruhe/Germany, 14/15 November 2002 opens with the statement: *“Analysts and policy-makers increasingly notice a changing nature of innovation. More and more, innovation is perceived as a systemic, horizontal phenomenon caused by, and influencing, a broad spectrum of factors, while the related political institutions are quite narrow and vertical in their thematic focus, working in a*

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*departmentalised and fragmented manner. These discrepancies, nevertheless, are becoming one of the most dangerous bottlenecks of future innovation systems.”<sup>1</sup>*

This statement still is valid nowadays and still no fully satisfactory solution has been found. The challenges faced seven years ago became even more important against the background of the economic crisis and the multitude of ad-hoc policy measures in its response.

## **The firm as final transformer of innovation policy**

The innovating firm is the primary focus of innovation policy. Policy support for individual firms is still a key component of innovation policy in OECD countries. However, the innovative behaviour of firms, their industries or clusters, depends to a great extent on the impact of a multitude of policy areas. Indeed, the firm may be at the nexus of more or less well co-ordinated policies that interact at firm level to create a system of incentives and disincentives.

In order to judge the interaction of various policy areas influencing (improving or hindering) innovation activities it will be instrumental to adopt a company’s perspective. Governments need to be more attuned to the mix of policies and the need to carefully assess how various policy areas influence, directly or indirectly, the development and dynamism of a sector or cluster. Governments may greatly improve the efficacy of the innovation policy system through better understanding of the interaction of various policy areas.

## **A systemic understanding of innovation**

Innovation is by its nature international and it is important especially (but not exclusive) for knowledge based companies to have access to large market places with as little barriers as possible. Specialization on larger markets is a success factor stronger than widening on domestic markets. Firms do not normally innovate in isolation but in collaboration and interdependence with others (suppliers, customers, research providers, technology and business partners, etc.).

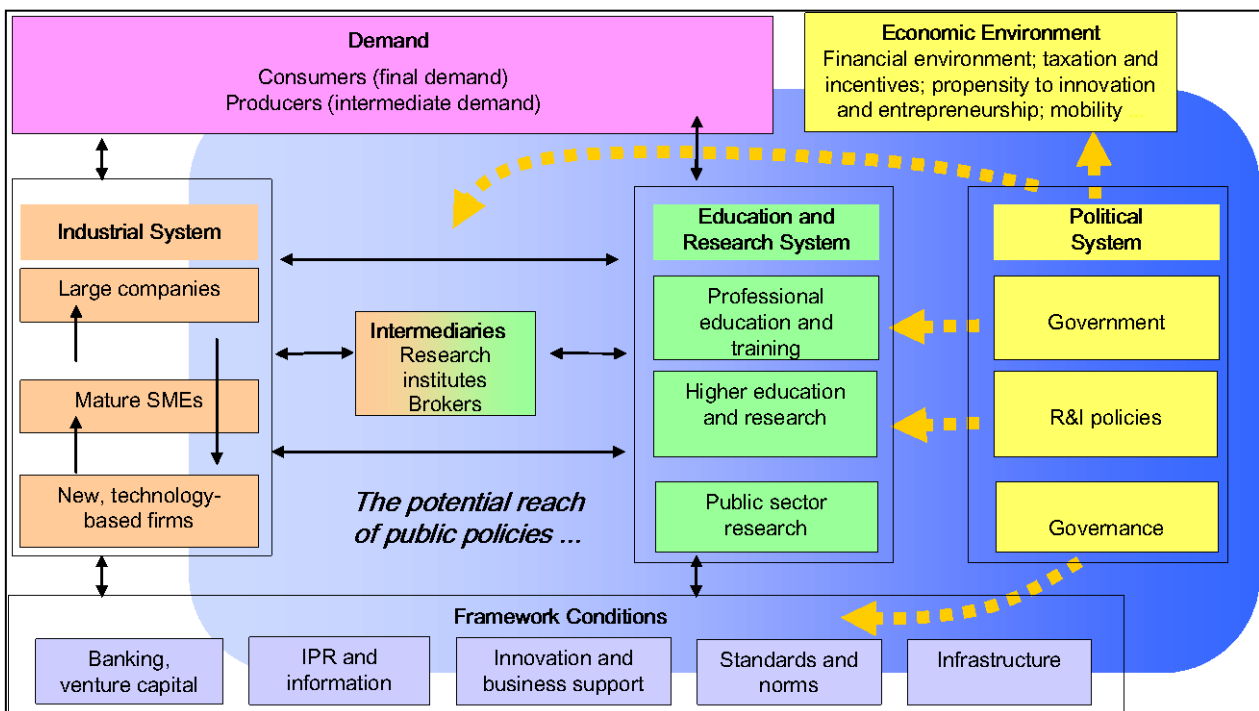
Following Kuhlmann (Kuhlmann 1999, Edler et al. 2003), innovation is understood as a complex process, where the *coupling* between science, technology, the marketplace and other parts of the innovation system is important. Empirical studies on innovation, such as the Community Innovation Survey (CIS), confirm that firms rarely innovate in isolation. Other economic actors and societal influences are needed for new ideas, and for specialist and complementary knowledge and capacities / resources. National, regional and sectoral economic performance is hence explained by the characteristics of the total system within which firms operate.

*“The innovation system of a society encompasses, according to a meanwhile widely accepted understanding, the “biotope” of all those institutions which are engaged in scientific*

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<sup>1</sup> Fraunhofer ISI Discussion Papers *Innovation System and Policy Analysis*, No 2/2003

research, the accumulation and diffusion of knowledge, which educate and train the working population, develop technology, produce innovative products and processes, and distribute them; to this belong the relevant regulative bodies (standards, norms, laws), as well as the state investments in appropriate infrastructures. The innovation system extends over schools, universities, research institutions (education and science system), ...” industrial and service enterprises, including financial services (economic system), the politico-administrative and intermediary bodies (public support system) “... as well as the formal and informal networks of the actors of these institutions, recently repeatedly also characterised as a “Triple-Helix of university–industry–government relationship” (Etzkowitz and Leydesdorff, 2000). As a “hybrid system” (Kuhlmann, 1999) it represents a section of the society which carries far over into other societal areas, e.g. through education, or through entrepreneurial innovation activities and their socio-economic effects: the innovation system has a decisive influence on the modernisation processes of a society.”<sup>2</sup>



*Innovation systems (adapted from Kuhlmann & Arnold 2001)*

Following this model innovation policy could be characterised as a dynamic multi-level, multi-actor and multi-domain landscape calling for strong governance approaches.

## Innovation policy as facilitator of employment and growth

At the Lisbon summit in March 2000, a new strategy to modernise the socio-economic policies of the European Union based on consensus among Member States was set out by

<sup>2</sup> Kuhlmann, 2001, p. 958.

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European Union leaders aiming to make the EU by 2010 the most competitive knowledge-based economy in the world. By 2004 it had become obvious that the reach of policies implemented in the wake of the Lisbon process, was not sufficient to attain the stated goals.<sup>3</sup> The European Commission used this report as a basis to refocus the Lisbon Agenda on actions to promote growth and jobs in a manner that is fully consistent with the objective of sustainable development.<sup>4</sup>

The re-launched Lisbon agenda is essentially based on the same original objectives, but is more focused on economic growth and job creation. EU Member States were called upon to take ownership of the re-launched Lisbon process, paying special attention to fostering growth and employment in their countries. The European Council adopted Integrated Guidelines for Growth and Employment – a more concrete guidance on how to translate the above mentioned ‘ownership’ and strategic goals into national action plans. Based on the guidelines, Member States produced 3-year National Reform Programmes by the end of 2005, and subsequent annual Progress Reports. The National Reform Programmes, Progress Reports and the respective coordination processes (especially the Open Method of Coordination) are key instruments in the new economic reform governance system within the EU. The purpose is to hasten reforms at national level in all Member States, have governments take more responsibility in the Lisbon process, and help the European Commission identify, launch and reform EU level activities to better support the Lisbon process.

At a policy level, the diversity of innovation causes difficulties in understanding the process as a whole. Initially, a research-based linear approach was adopted, although a systematic approach which includes all the factors involved in innovation is more appropriate. The systemic model needs to be developed in order to gain an understanding not just of technological innovation, but of other forms of innovation as well. The European Union must therefore deepen its knowledge of this process in order to develop an effective policy.

Understanding “innovation policies” as the integral of all state initiatives regarding science, education, research, technology policy and industrial modernisation, overlapping also with industrial, environmental, labour and social policies, public innovation policy aims to strengthen the competitiveness of an economy or of selected sectors, in order to increase societal welfare through economic success.

Innovation policy in the light of a systemic understanding of innovation is the mix of instruments influencing directly or indirectly the innovative behaviour of firms. As innovation often takes place at the edge or crossing-points of established markets and sectors, indirect rather than direct measures seem to be more efficient to create space and appropriate conditions for innovation.

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<sup>3</sup> Compare „Facing the challenge. The Lisbon strategy for growth and employment.” Report from the High Level Group chaired by Wim Kok November 2004 (the “Kok report”)

<sup>4</sup> COM(2005) 24 final: Communication to the spring European Council “Working together for growth and jobs: A new start for the Lisbon Strategy”

- The ultimate goal of innovation policy is to secure or enhance value creation in a specific geographic (regional, national or European) area securing jobs and wealth through economic growth and increased productivity. This goal includes in principle the dimension of competition between regions or nations focusing on similar objectives.
- Innovation is more than new (technological) products: it includes new services and business models as well. This implies that more policy areas are influencing innovation than pure RTD and technology policies.
- Innovation takes place in a ever more globalised knowledge economy in combination with local interaction in value networks and clusters.
- While traditional innovation support measures were basically legitimised by the concept of market failure, modern innovation policies also have to deal with system imperfections.

Taking into account these dimensions, horizontal as well as vertical coordination of policies and actors on a European scale is needed to optimise impact and allocation of resources. Governments need to design and implement policies in increasingly complex, highly networked and multi-layered research and innovation systems that are continuously changing. Institutional structures and policy approaches have not yet adjusted to the radically changing conditions for innovation policy.

Incorporating innovation into the EU's different policies would help strengthen companies, which are at the core of the innovation process. Staff trained in entrepreneurship would be better equipped to grasp the opportunities offered by the market. Successful cooperation with other companies and the public authorities calls for the creation of "clusters", which are geographic concentrations of complementary, interdependent yet competing enterprises. Market conditions and consumer demand also play an important role. Some parameters, such as competition, capital injection, a supportive regulatory environment and light regulatory burdens, and skilled and mobile labour force are also necessary for the development of innovative processes. These multiple dimensions make the implementation of innovation policy a delicate matter. The Community, national and regional authorities therefore need to approach the matter with the utmost flexibility.

## **Governance**

Improving the coherence of policy mixes requires the adoption of 'systems' perspective in which all policy mix elements are seen as the legitimate concern of policymakers preoccupied with the health of the innovation system. Thereby, particular attention needs to be paid to the relationships between various ministries or other public authorities involved, as well as advisory bodies, parliaments, research institutions, non-governmental stakeholder organisations, and of course industry.

Governance concerns the systems and practices that governments use to set priorities and agendas, design and implement policies and obtain knowledge about their impacts and effectiveness. Governance refers to processes and activities put in place to ensure that relevant policy needs are identified, appropriate policies are designed and implemented

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effectively and efficiently and that the necessary learning takes place by involving all relevant stakeholders.

For the purpose of this paper we use an understanding of governance as coordination mechanisms to synchronise different policy levels (EU, national, sub-national), departments (research, enterprise, education, environment, internal market, etc.) and innovation actors (policy-makers, entrepreneurs, researchers, support providers, finance, education and training institutions, etc.) to agree on strategies, targets, priorities and implementation methods.

Innovation policy development and implementation shows great diversity amongst Member States regarding allocation of responsibilities and tasks to Ministries, Innovation Agencies and regional / local authorities. In larger countries with strong regional structure different regional agencies/organisations are key actors. This diversity has to be taken into account by further developing European models for an improved system of innovation governance. The whole chain of actors, covering policy design, development and implementation as well as delivery of services / funding to businesses and knowledge base, has to be involved in a renewed agenda for transnational cooperation. The potential partners are diverse according to the different institutional setting in the different states, but could nevertheless be well defined.

The processes of consensus-building, decision-making or even implementation of decisions are not merely determined by state actors or formal governments. Rather, due to growing complexity and segmentation of modern societies and issue areas, it is the interaction of societal and state actors that defines problems, builds up the necessary degree of consensus on problems and solutions, consolidates conflicting interests and (pre-)determines political decisions. Since state actors need the co-operation of the stakeholders involved in order to come to grips with complexity and fragmentation, they have to trade much of their hierarchical power for access to interest group expertise. In innovation policy, the governance system has to deal mainly with two types of distributive conflicts reflecting two different divisions. The first one relates to conflicts among important actors within the system (i.e. scientific or academic versus industrial interests), whereas the second refers to potential conflicts between national states as players in distributive systems with the materialisation of economic returns on investments and subsidiarity issues.

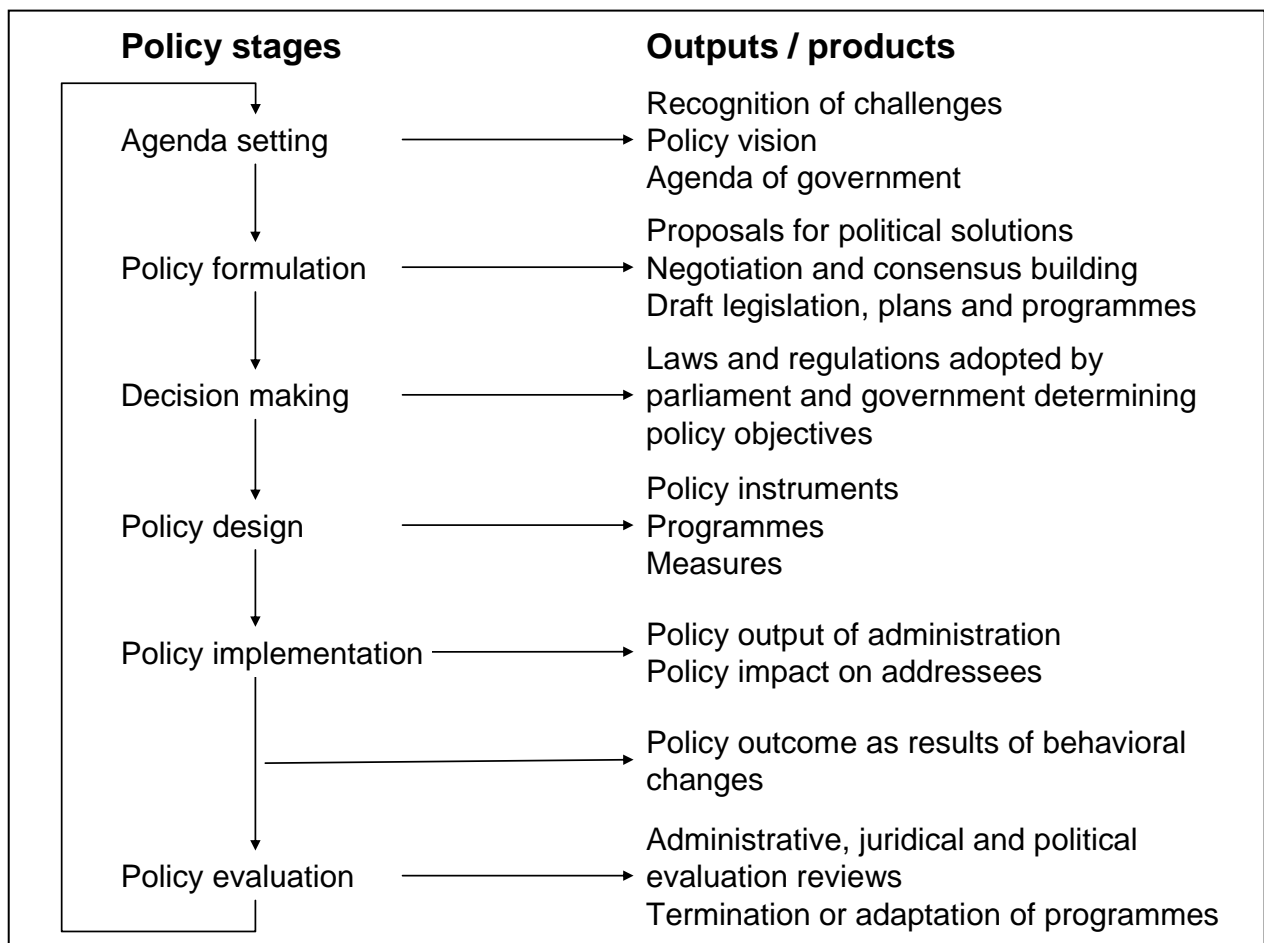
The fact that public policies are complementary and have a considerable number of linkages among each other has far-reaching consequences for the way in which states and governments are able to steer political decision and implementation processes. Many issues, in fact, cannot be tackled by one single policy domain or body of specific legislation. Effective solutions for most societal problems have to be found through different agencies and actors as well as through coordination among the goals and instruments set out in different policy areas.

In fact many public policies show strong impacts from decisions taken outside of their own field of competence. Cross-sector policy impacts can thus be defined as the supporting or impeding effects from one policy on another one. They may be the intentional result of a

coordinated process of policy formulation. Others may not have been intended by policy-makers and their effects are revealed only during the implementation process. Public interventions are, at any rate, not always well coordinated and may lead to contradictory policy results.

To a large extent the success or failure of a given policy depends on the supportive or impeding impacts that result from other policies. To assess the kind and directions of cross-sector effects among different public policies requires a thorough understanding of policy formation and implementation processes. The analysis has to take into account the combined outcomes and results from economic, social and environmental policies and law that influence innovation and firms' behaviour.

Bearing on the understanding of innovation systems, European innovation policies are dynamic multilevel and multi-actor policy frameworks which need strong horizontal and vertical coordination. Efficient governance models need to be dynamic as well and differ along the stages of the policy cycle.



*Stages of the policy cycle*

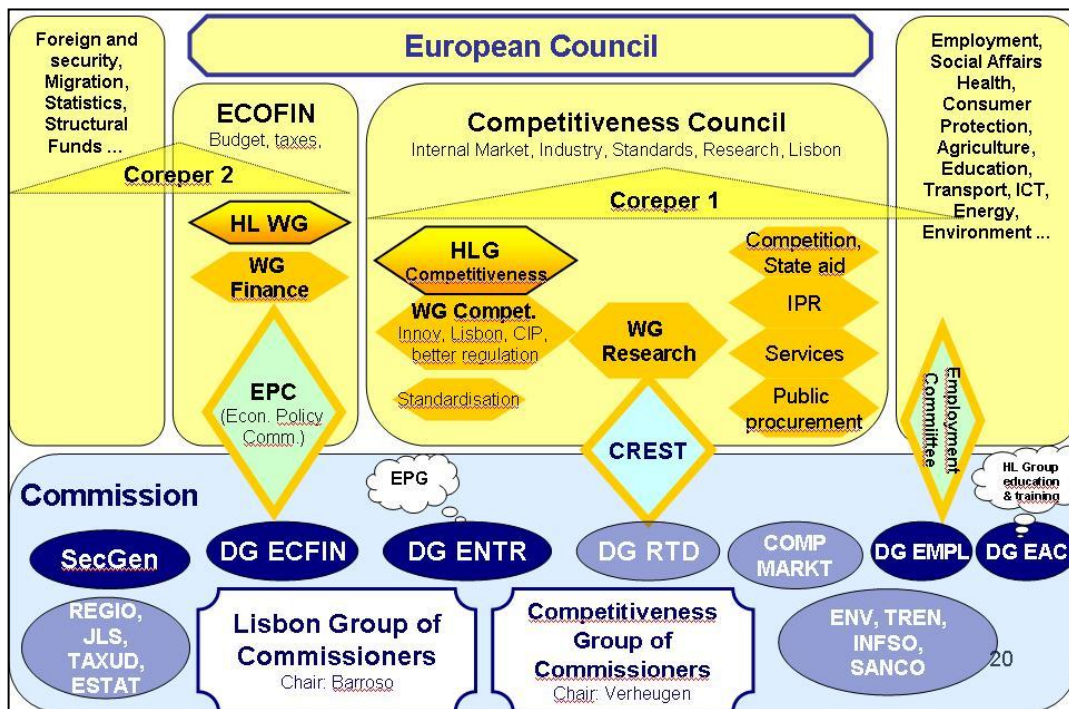
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Up to now, there is no clear leadership for the broad policy area of European innovation policy and hence policymaking suffers from lack of commitment and subsequent fragmentation between traditionally defined policy domains. Hence there is a need for more coordination and coherence between levels (EU, national, regional, local) and domains (education, research, environment, health, etc.). To succeed in the ambitious plan of constructing a “European Knowledge Area”, Member States and the European Commission should develop joint thinking between policy domains and across policy levels and adopt a more strategic and integrated approach to deliver more efficient policies. A systemic view of R&D and innovation as key drivers of economic growth and development needs to be embedded in policy-making.

## Innovation policies on European level

The “ownership” of the Lisbon process is shared between the Community and the Member States and the role of the Commission is that of a facilitator and an equal partner, rather than a manager or a controller. Lisbon governance instruments rely on the use of the Open Method of Coordination (OMC) which provides a voluntary framework where individual Member States can support the reform of their own policies through mutual learning, and peer review with the rest of Member States.

Obviously, behaviour of dynamic innovations systems with changing relationships between levels and actors contradict policy development of rather static multi departmental structures. Competences and activities in support of innovation can be found on virtually all public levels from local and regional initiatives to national, trans-national and European ones. Following Reppel (Reppel 2009a) the picture of governance at Council and Commission level reflects the broad range of policy areas contributing to or shaping innovation policy.

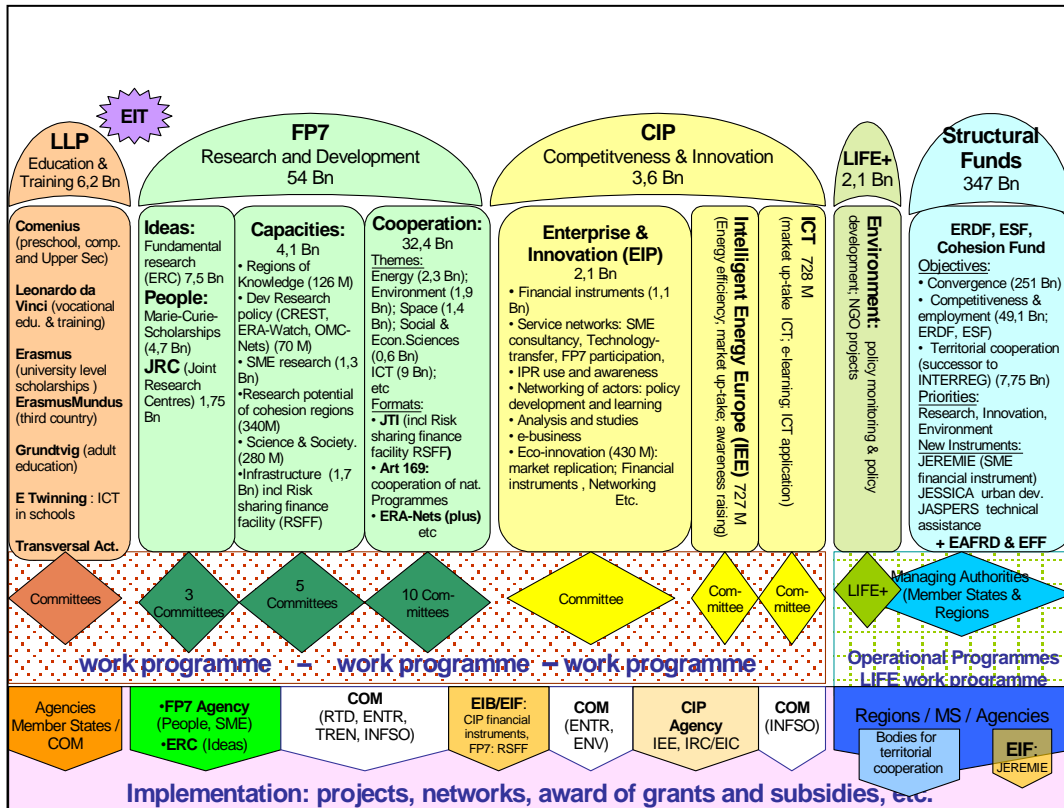


*Governance at Council and Commission level (Reppel 2009a).*

Taking into account programmes like structural and social funds (ERDF, ESF) and Interreg activities, national and regional actors are entering the game as well. Both, horizontal and vertical coordination is needed in order to optimise allocation of resources and (joint) impact of policy interventions.

The complex policy structure is mirrored against a stakeholder structure which turns out to be at least as rigid as the departmental structures on European and national level.

Organisational structures on Commission level are reflected in the variety of programmes targeting innovation.



Governance structures for main EU programmes targeting innovation (Reppel 2009b)

## Measures of coordination

In order to seize potentials and boundaries of coordination, it is helpful to distinguish between two types of coordination. **Structural coordination** implies the reduction in the degree of inferences from one institution with the competencies of other units. A comparatively frequent case is structural coordination on a bilateral level with only two institutions or actors. It requires the precision of the responsibilities and the terms of activities of the interfering actor by limiting his sphere of intervention to his constitutional and/or administrative mandate. Structural coordination is unlikely to promote new solutions but helps to clarify the competencies of government and administration as consistent with the objectives and instruments of the prevailing public policies.

In **process coordination** actors try to optimise the utility of all activities to be envisaged. They evaluate the options and likely commitments of other actors and parties involved and choose what they consider the optimal solution to them. A prerequisite for process coordination is that the participating actors share a clear understanding of the advantages and disadvantages which may accrue to each party. Actors that are bound to accept disadvantages should be compensated in order to keep them as partners in longer-term cooperation. Multilateral coordination needs to be institutionalised and has to provide a guarantee that the focus is on issues of common interest that are to be negotiated (shared vision and leadership). Maintaining and developing the already existing coordination and

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cooperation patterns is of considerable interest since the creation of new policy networks is usually quite costly.

In general, three types of coordination approaches could be distinguished:

- Top-down approach based on sound policy analysis and planning (mainly valid for structural coordination).
- Bottom-up approach involving key actors from all policy levels (like the well established Open Method of Coordination on European level).
- Shared leadership based on a joint vision and common objectives. This approach needs strong moderation and mediation, and results in a co-opetition model already proven in business environments.

All these coordination approaches need a specific set of instruments including:

- coordinated planning and consultation procedures,
- inter-departmental / inter-DG coordination mechanisms,
- establishment of public fora for informal or formal exchanges between different stakeholder groups,
- establishment of effective coordination procedures among public administrations,
- allocation of resources to institutions and units adequate to their responsibilities and cross-sector linkages.

Coordination is complementary to the establishment of organizational structures but cannot replace the formal distribution of competencies and resources among policy institutions. Coordination functions well if it generates additional benefits for at least one of the involved partners. It is effective and operates smoothly if the majority of the partners, be it within the administrations or in combination with external interest groups, can rely on policy objectives and linkages with positive effects. However, one has to be aware of the limits of inter-administrative coordination, especially if important and largely controversial interests shape the content of different public policies and if cross-sector linkages have largely impeding or contradictory effects. Administrative coordination procedures have limited potential and become easily inoperable if competencies and resources are unequally distributed or if the redistribution of responsibilities and resources is at stake.

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## Policy coherence

Policy coherence has many dimensions:

- Horizontal coherence – coherence of innovation policies across sectors, ministries, departments, directorates, etc..
- Vertical coherence – coherence of innovation policies across governance levels, e.g. between EU, national and regional.
- Temporal coherence (dynamics) – coherence of innovation policies over time, and predictability of policy changes.

There is need to focus on public capabilities to manage complex political networks with a wide range of stakeholder interests in innovation practices. It is important to find out to what extent those interests are compatible or conflicting and the reasons for both. In the case of compatibility of interests one has to know in which way public policies can foster synergy and optimise the available resources. In the case of conflicting interests one has to find out to what extent modified political solutions and regulations can be found or to what extent complementary measures and/or compensation may reduce or neutralize negative policy effects.

Innovation policy is driven by persons rather than institutions. It is important to identify the “change agents” in innovation governance (people who drive innovation governance and who are able to influence policy). Beyond appropriate content, structures and processes people need to be motivated to work together, who are used to compete regarding their personal careers. Reliability of the personal situation will be pre-requisite for the readiness of open co-operation in a dynamic and changing (working) environment. Crucial for any cross-departmental and institutional co-operation activity will be an appropriate leadership, which could be organised in (at least) three different settings:

1. No other option: “the boss decides”
2. Cooperation wins: incentives for those actively cooperating
3. Shared ownership: leadership through joint vision and objectives

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## Conclusions

In its synthesis report “Lisbon Strategy: Between revolution and illusion - The governance challenge for knowledge policies” the Lisbon Expert Group advocates<sup>5</sup>:

*“1. A change in policy approach: an evolution towards open, dynamic and systemic knowledge policies in Europe, based on a broad and efficient mix of policies and instruments, adapted to the diverse landscape of actors and S&T domains, and incorporating a multi-level dimension;*

*2. New modes of governance of knowledge policies: reinforcing the existing voluntary approach by enhanced strategic intelligence capacities, strengthened policy experimentation, empowerment of change agents, and the establishment of stronger incentives towards the Lisbon and ERA goals.”*

Analysis and discussion of governance of innovation policy in Europe as presented in this overview is nothing new and could be found in earlier papers presenting similar results (see for example Kuhlmann 2001). Recently, the addendum to the Lund declaration states<sup>6</sup>:

*“Europe also needs to find effective ways to prioritize research and innovation targeting the Grand Challenges that are widely inclusive and cross boundary in their character. It needs efficient ways to manage research and innovation activities and relationships, which implies considerably improved governance structures and processes between regions, Member States and the EU, as well as at each of the different policy levels. This will be of major importance to the sustainable growth in Europe and in the rest of the world.”*

Whereas analyses and recommendations on a general level are welcomed by many politicians and policy makers on European, national and regional level the same persons retreat when it comes to their personal working area.

In order to dissolve this conflict the scenario: centrally “mediated” mixture of competition and co-operation in integrated multi-level innovation policy arenas already proposed by Kuhlmann 2001 in combination with strong focus on “Grand Challenges” may result in a “shared ownership” model of European governance. Complemented by appropriate incentives for cooperation across departmental and institutional borders this model may open the way to improved governance in European innovation policies. The post-crisis development of European policies may open a window to overcome inertia and lock-in behaviour of (political) structures.

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<sup>5</sup> European Commission 2008, p. 7. The report can be downloaded from:

[http://ec.europa.eu/invest-in-research/monitoring/leg\\_strategy\\_en.htm](http://ec.europa.eu/invest-in-research/monitoring/leg_strategy_en.htm).

<sup>6</sup> The Lund Declaration; addendum, July 14th, 2009.

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## Further reading

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### **INNO-Views**

*INNO-Views policy workshops establish a dialogue between public authorities, analysts, industry and academia to explore new or better innovation policy instruments for Europe. The workshops have the objective to explore innovation themes related to actual and forthcoming needs of European innovation policies. On average, 4 workshops are organised per year. The workshops bring together 30-40 relevant professionals and are organised on the basis of personal invitations only. Workshop results are published on the PRO INNO Europe website (<http://www.proinno-europe.eu>).*

*Any requests, recommendations and suggestions of themes, experts and locations for further workshops are welcome and should be directly addressed to INNO-Views:*

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