

## Session 2

# Implementing a Systemic Policy Approach to improve the EU's Innovative Capacity

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Europe's performance in R&D, innovation and growth continues to be a disappointing story. While there are examples of good performance in particular sectors and particular Member States, overall the EU innovation environment remains weak. This is all the more remarkable taking into account that the Lisbon European Council in 2000 rightly recognised that Europe's future economic development would depend crucially on its ability to create and grow high value, innovative and research-based sectors. EU and national action plans have accordingly been developed to boost innovation. The EU's R&D deficit became a central focus of research policy with the articulation of the 3% target for R&D expenditures at the Barcelona European Council in 2003. If recent trends continue, nor the 2% private nor the 1% public target will be reached by 2010.

With lacking results comes fatigue, lack of interests and mounting criticism on policy: not enough public funding dedicated to innovation; lack of governance; no real commitment beyond rhetoric; wrong focus; wrong and missing instruments.

Are these criticisms grounded? Before we can check whether we have the right policy framework in place, we need to start with a correct diagnosis of the causes of the EU's innovation deficit. Failing to address the structurally-rooted problems entails the risk that we may end up with socially-unproductive expenditures on R&D if we attempt to, and succeed in, forcing the R&D numbers up. This note addresses (i) what we know from economic analysis is required for developing an innovation capacity (ii) on which dimensions the EU is deficient and (iii) map policy to what is needed to redress the deficiencies.

## 1. Better identifying the nature of the problem

Throughout the note, we will take a broad perspective on innovation, going beyond R&D. With the ultimate objective to create growth and jobs, innovation capacity requires more than the ability to produce new ideas. It also includes the capacity to bring new products and process to market. In this perspective, developing an innovative capacity involves not only the creation of new knowledge, but also the capacity to transfer, diffuse and absorb new knowledge. It also suggests a double perspective in looking for causes of any deficit: capabilities for innovation but also incentives or rewards for innovation may be low.

A sufficiently developed 'supply' side of R&D (the amount of R&D investment carried out, the number of skilled researchers and public S&T infrastructure) is a necessary, but not sufficient condition for successful innovation. A sufficient 'demand' for innovation to reward successful innovators is important as well. This

requires sophisticated lead users willing to adopt innovations early on, a large base of customers willing to pay for innovative products, effective intellectual property rights (IPR) schemes. This also entails the usual list of well-functioning product, capital and labour markets. It also requires interconnectedness of its agents. Through networking among firms, researchers and governments, the supply of new ideas diffuses more quickly through the economy. Of particular importance is the public-private interface, particularly links between the public educational and research system and the private industrial base.

In this perspective, three types of deficits can arise (i) deficits in resources and capabilities for innovation (ii) deficits in incentives for innovation and (iii) systems failures (with the second seen as the most pivotal).

## **2. Diagnosing the EU's innovation deficit problem**

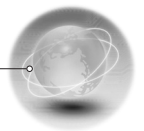
That Europe's lagging growth performance is indeed related to an innovation deficit problem is illustrated by the lower contribution to overall productivity growth from ICT production and use in the EU. This ICT story reflects more generally EU's difficulty in re-orientating its economy towards newer, higher productivity, growth sectors.

The EU innovation environment remains weak in a number of key 'input' indicators, such as the amount of public and private R&D investment and the stock of S&T researchers. The proportion of the population in tertiary education in the EU is smaller compared to the US and Japan, funding allocated to education is lower and there is a net outward migration of the best of researchers. General weaknesses of the higher education system are often mentioned to explain weaknesses on the capabilities' side, with poor governance of universities and research centres, rigid structures and lack of rewards, autonomy and accountability in a non-integrated education and research market. This compares to the US with an openly competitive system of private and public universities and government funding through peer-reviewed research grants.

But in addition to input deficiencies, market pull conditions and knowledge networks are key areas of EU weakness. Often the EU does not exploit its available knowledge inputs and expertise for social and economic needs (the 'European paradox'). In the private sector there is often too little incentive to innovate: European product and services markets remain too fragmented, lacking a sufficiently dynamic competitive and lead user friendly environment. Again this compares to the US, offering a large integrated market unencumbered by differences in language, customs and standards; a clearer and stronger US Intellectual Property Rights system; better industry science links, more flexible financial markets, making available venture capital finance to innovating firms; and more flexible labour markets, affecting both internal migration and the international immigration of highly skilled people. The US also holds a better public procurement and R&D subsidies process in government-funded military, space and health programmes. For example, the policy of "second sourcing" pursued by the US military, the insistence on the availability of a second source of supply, is generally seen as playing an important role in contributing to the diffusion of technology in the formative stages of the US semiconductor industry and other lead sectors in the ICT complex.

All this confirms the analysis of a persistent innovation deficiency of the EU, and this in all three areas identified.

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### 3. Designing policy for tackling the deficient EU innovative capacity: Improving the Lisbon Policy

In view of the scope of the problem, tackling the deficient EU innovative capacity requires a longer-term, broad, systemic policy framework. No single action will deliver innovation based higher growth. Rather, a series of interconnected initiatives and structural changes are needed. Going beyond stimulating the research inputs from the public and the private sector, it is important that other structural reforms are part of the policy agenda as well. The Lisbon strategy embodies the idea that to yield maximum synergies from structural reforms in product, labour and capital markets, they are best implemented in a comprehensive and co-ordinated way. The problem is, however, that the Lisbon strategy is not sufficiently connected to be effective as a truly 'systemic' endeavor. Lisbon is yet a collection of policy initiatives, rather than a truly integrated view. What follows are some suggestions to improve the Lisbon Policy Framework, to unleash its potential as a systemic policy approach, capable of tackling Europe's innovation deficit.

*More attention to measures aimed at enhancing demand for innovation:* Policy intervention to tackle this deficiency includes the importance of market integration and competition for innovation, regulation and new technologies, a clear globally competitive IPR regime, improving public procurement and the process of setting norms and standards to support innovation. In view of the pivotal nature of this market deficiency, actions are urgently needed.

*More attention to improving R&D resources:* budgets for providing public R&D infrastructure, basic research and education remain core areas of public policy. But more attention should be focused on increasing the productivity of public spending on R&D, by focusing on excellence (not spread thinly across a large number of weak hopefuls) and leveraging the complementarity with private spending as well as with other public spending. Innovation should be mainstreamed as a horizontal objective in all government budgets. At the EU level, a larger part of the Structural and other funds should be earmarked for building innovation capacity.

*More attention to measures aimed at enhancing diffusion and absorption capacity:* The role of clusters and knowledge sharing continue to be high on the policy agenda of many Member States. Although interactions are reinforced by geographic proximity and clusters are consequently often local and regionally based, international opening up and linking up of R&D capacities outside regional and national borders, needs to be reinforced. However in pursuing the cluster concept at local and EU levels, we need to be careful, only intervening to support those clusters where markets are failing, taking a sufficiently open perspective to new entrants and avoid supporting incumbency.

*More attention to different forms of innovation:* There is a great deal of diversity amongst sectors and technologies in terms of innovation processes, innovation inputs and outputs. Particularly in services there are other forms of non-technological innovation which are less recognised, while their potential for contributing to the Lisbon objectives is potentially huge. These types of innovations are mostly embedded in organisational structures and processes and can be important complementary forces to leverage technological innovations.

*More attention to policy governance: enhancing horizontal policy coordination:* The triangle of research, innovation and education policies should not be designed in isolation from each other. At the same time, this triangle should be in close interaction with other policy areas (financial markets, labour markets, product markets, macro-economic, environmental policies). Close co-operation among decision-making instances or even integration should be explored to guide prioritisation processes and to better exploit synergies.

*More attention to policy governance: enhancing vertical policy coordination:* Competence for innovation policy lies at EU but mostly at national and regional level. The Lisbon strategy and the ERA should not be thought of as a harmonization process: innovative and productive structures' differ across countries and regions. A decentralized policy approach implies more possibilities of adaptation to local specific needs. Nevertheless, coordination among the various policy levels is important. European level policies and national policies as well as regional policies should form a coherent mix, in which all policies focus on those capabilities, market and systemic failures best solved at each level. The idea is to facilitate co-optition and to boost diffusion of policy know-how.

*More attention to policy governance: improving policy monitoring and evaluation:* Policies need to be supported by analysis, monitoring and evaluation practices, which then feed back into the policy process. In the set of indicators currently being collected and monitored in the Lisbon process to evaluate progress, the area of indicators that is least represented relates to the diffusion capacity. Especially the lack of Industry Science Link Indicators is disturbing since this is one of the particular deficiencies of the EU innovative capacity. This is due to a lack of systematic data on this. More could be done here. Furthermore, since the systemic approach often operates at the specific technology/sectoral/regional level, this implies that indicators should be traced at technology/sectoral/regional level.

To conclude, the way forward for improving innovation policy in Europe is in better analysis/diagnosis to guide policy design ex ante, more experimentation with new (combinations of) instruments and better evaluation ex post, killing experiments if unsuccessful. Although these policy suggestions seem to represent only incremental innovations to the current policy framework, they are nevertheless not easy to implement, requiring innovations in organisational design of the policy process and bolder, but better supported, policy makers.