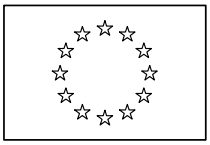

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COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Reviewing Community innovation policy in a changing world

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1. INTRODUCTION

'*Innovation is the ability to take new ideas and translate them into commercial outcomes by using new processes, products or services in a way that is better and faster than the competition*'[1].

Innovation cannot be organised by decree. It comes from people, and only people — scientists, researchers, entrepreneurs and their employees, investors, consumers and public authorities — will make Europe more innovative. But they do not act in a vacuum. They act with a mindset and in a framework which either discourages or incites them to enter unknown territories.

Innovation is the precondition for the creation of a knowledge-based, low-carbon economy. Mastering this transformation is crucial to remain competitive in the globalised world and to achieve wider societal goals in a sustainable way under the pressure of demographic changes, the climate challenge, scarce resources and new security threats.

Innovation enables European industries to position themselves at the upper end of the global value chain, making Europe the world market leader in energy and resource efficient products and technologies and equipping us with the means needed for global action. Moreover, only in an environment that supports innovation can R&D efforts result in real gains.

That is why the re-launched Lisbon Partnership for growth and jobs has put innovation and entrepreneurship at the centre and called for decisive and more coherent action by the Community and the Member States. On this basis, an ambitious European innovation policy has been launched and the Small Business Act (SBA) has been agreed[2]. Thanks to this partnership approach, progress can today be reported. Almost all Member States have improved their innovation performance. The innovation gap between the EU and its key competitors, the US and Japan, has narrowed.

As new competitors are emerging and challenges are getting bigger, the EU must not only sustain the recent positive trend, but further improve it. While the economic crisis risks reducing available resources, from previous recessions, such as in the case of Finland, we know that prioritising investment in research and innovation is possible and can play a key role to enable a sustainable economic recovery.

The aim of this communication is to identify remaining gaps and propose policy orientations on how to fill them.

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1 'Creating a National Innovation Framework', Science Progress, Richard Nedis & Ethan Byler, April 2009.

2 COM(2005) 488, endorsed by the Council Conclusions of 28-29.11.2005 (http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/intm/87210.pdf), and COM(2006) 502, endorsed by the Council Conclusions of 4.12.2006; http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/intm/91989.pdf.

2. PROGRESS ACHIEVED

2.1. Improving framework conditions

Guided by the Lisbon Partnership for Growth and Jobs, the EU has since 2005 worked to improve framework conditions for innovation. Member States and their regions were encouraged and helped (in particular through cohesion policy) to improve their innovation policies by implementing national and regional innovation strategies and developing evaluation.

At Community level, access to the single market has been made easier, the availability of cost-effective inputs has been improved, competition policies fostered, and conditions for entrepreneurship and for the growth of new ventures strengthened. The Commission has called for integrated flexicurity policies to modernise labour markets and urged Member States to put education and skills high on their agenda. With the **SBA**, the EU and the Member States have undertaken to make the EU a breeding ground for entrepreneurs and SMEs. Moreover, partnerships have been established with key industrial sectors, defining and agreeing on the long-term framework conditions for a competitive industrial European base.

The removal of barriers to the proper functioning of the **internal market for goods** and the implementation of the **Services Directive** by Member States will remove a broad range of administrative and legal obstacles to doing business. As a consequence, innovative SMEs will have easier access to markets and public administrations will be modernised.

Meanwhile, it is also acknowledged across the EU that **excellence in education, skills and training** is a pre-requisite for innovation. Lifelong learning has become a policy priority, and reforms in education and training systems in Member States aim to increase investment in human capital, facilitate innovation and promote a more entrepreneurial culture. The actions implemented under the New Skills for New Jobs strategy will help to ensure a better match between skills and labour market needs, to better assess and anticipate the skills needs of individuals and companies and to promote a general up-skilling of the European workforce. The updated Strategic Framework for Education and Training (ET 2020) sets out a comprehensive policy agenda in support of Member States' education and training reforms. Implementation of the EU e-skills strategy fosters the digital skills of the European workforce[3].

The modernisation of the EU's **state aid** rules has provided Member States with an effective public policy tool to support R&D and innovation. Member States are now in a position to grant a number of different types of state aid for innovation without having to notify individual measures to the Commission and with a low administrative burden. Since the modernisation of the state aid rules in 2006, new aid instruments have been created in Member States, including 30 schemes for young innovative companies. The Community Guidelines for State Aid for Environmental Protection, revised in 2008, provide for the possibility of higher aid intensity for eco-innovation[4]. In recent years, there has also been a trend in Member States to complement R&D subsidies and grants with tax incentive schemes,

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3 COM(2009) 116 proposing a renewed strategy for ICT R&D and innovation.

4 OJ C 82, 1.4.2008, p. 1.

which have had a positive impact on private R&D investment. The Commission has facilitated the dissemination of good practice via a network of national experts[5].

Finally, non-technological aspects of the innovation process, such as design and marketing, are increasingly important to getting more innovative products and services in the marketplace. In this respect, the European Union Office for Harmonisation in the Internal Market (Trademarks and Designs) has lowered the cost for European **trademark** registration applications twice in the last five years. The new rate (40 % lower than previously charged) has reduced the cost of obtaining trademark protection throughout the EU to an all-time low. The average time needed to complete the registration process has also been cut by 50 %[6].

2.2. Helping to trigger more and quicker market uptake of innovative products and services

The EU has recognised and used regulation and standardisation as powerful tools to provide the right incentives and stimulate markets for innovative products and services.

New **rules** on car emissions aim to trigger substantial innovations in the European automotive industry and will result in cleaner, affordable European cars — innovations that should keep this industry globally competitive. The Emission Trading Scheme (**ETS) Directive** will foster innovation in renewable energy production and encourage the construction of more environmentally friendly power plants, including new carbon capture and storage (**CCS)** technologies. The **Strategic Energy Technology Plan** helps to accelerate the development of low-carbon technologies essential to achieving the "20-20-20" objectives by 2020. The **REACH** and **cosmetics** legislation provide major incentives for innovation in alternative substances. The **Action Plan on Sustainable Consumption and Production and Sustainable Industrial Policy**[7] sets out a harmonised, integrated legal framework to foster innovation towards more energy-efficient and environmentally friendly products. Where industry fails to set itself ambitious targets, the revised **Eco-Design Directive** provides a legal basis for promoting the market introduction of more environmentally friendly products both in terms of energy efficiency and resource efficiency. This includes using appropriate incentives, public procurement and product labelling to ensure that demand underpins this policy.

European **standardisation policy**[8] has evolved to support innovation, with a stronger commitment to an open market-led standard-setting process, including a collaborative, consensus-based approval process for the development of domestic and international standards, and to the voluntary use of standards, the inclusion of new knowledge in standards and easier access to standards-setting processes, notably for SMEs. For instance, SMEs now make up 27 % of ETSI's membership and enjoy reduced fees.

Moreover, **demand** can drive innovation by encouraging innovators to meet new, advanced needs. In this context, the potential of existing EU public procurement rules to support innovation is large and their use can be explored further[9].

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5 See COM(2006) 728.

6 In 2008, over 87 000 applications were received by OHIM for Community trademarks.

7 COM(2008) 397.

8 COM(2008) 133.

9 http://www.proinno-europe.eu/doc/procurement_manuscript.pdf

The **Lead Market Initiative** (LMI), launched in 2008, has identified markets for innovative products and services where innovation is both needed and possible and where the use of the above-mentioned instruments influencing the capacity to quickly put new products on the market in a more focused way can make a real difference (bio-based products, eHealth, sustainable construction, protective textiles, recycling, and renewable energy).

2.3. Building synergies

The development of the **European Research Area** since 2000 has led to several initiatives to encourage a more coherent research and innovation system in Europe. Recent policy initiatives aimed at creating an internal market for knowledge by supporting the mobility of researchers and the access to and the circulation, transfer and exploitation of knowledge and technologies ('5th freedom'). In particular, to address the relatively poor up-take of research results in Europe, the Commission proposed voluntary guidelines to improve research collaboration and knowledge transfer between public research and industry[10]. The increasing coordination between EU and Member State levels provides a more effective framework for pooling resources for new research infrastructures and for joint strategic research programmes addressing major societal challenges and better protection of intellectual property rights, along with a new strategic European framework for international science and technology cooperation[11].

Collaboration on research and innovation has been reinforced. In recent years, new **public-private partnerships** have been set up in various fields using different instruments and legal bases. Five **Joint Technology Initiatives** (JTI) have been set up, each as an independent legal entity with substantial budget allocations from the Seventh Framework Programme[12]. Furthermore, under the European Economic Recovery Plan, public-private partnerships for green cars, energy-efficient buildings and 'factories of the future' are being launched.

The **European Institute of Innovation and Technology** has been created to stimulate and deliver world-leading innovation by bringing together higher education, research and business around a common goal. Knowledge and innovation communities will soon be established to address major societal challenges such as climate change mitigation and adaptation, sustainable energy and the future communication and information society.

Finally, the Commission has helped to strengthen collaboration among different innovation actors and supported mutual policy learning between innovation policy makers and public innovation support bodies at different levels. In particular, a soft EU policy framework has been put in place to raise the level of excellence of **clusters**[13] in the EU Member States and to promote cluster cooperation as a way to improve innovation capability and strengthen positions in global markets.

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10 COM(2007) 182 - Improving knowledge transfer between research institutions and industry across Europe: embracing open innovation – Implementing the Lisbon agenda

11 See COM(2008) 588.

12 Innovative Medicines (IMI) with a Community contribution of €1 billion; Embedded Computing Systems (ARTEMIS) — €420 million; Aeronautics (Clean Sky) — €800 million; Nanoelectronics (ENIAC) — €450 million; and Fuel Cells & Hydrogen (FCH) — €470 million.

13 See COM(2008) 652.

2.4. Stepping up financial support for research and innovation

European research policies and programmes have been reinforced to better support innovation. The **Seventh Research Framework Programme**, with its substantially increased budget of €54 billion for the period 2007-2013, supports commercially relevant research, in particular through Joint Technology Initiatives and participation in joint research initiatives set up by Member States. Knowledge transfer activities and support for mobility, international cooperation and infrastructures also have strong relevance for innovation. The Commission is also facilitating private-sector research coordination through the European Technology Platforms. EU research in key areas such as ICT, health, security, space or marine sciences has increased. While improving conditions for SME participation in research programmes is an ongoing task, the Framework Programme provides specific schemes for SMEs, both for research intensive ones and those with limited research capacity. A new risk-sharing finance facility (RSFF) has been set up together with the EIB to provide loans to private and public entities for high-risk R&D projects.

Cohesion Policy is providing a stable and strategically targeted source of innovation financing, which has increased strongly to 25% of the overall budget in the period 2007-2013, compared to 11% in the period 2000-2006. Some €86 billion in over 380 of the 455 operational programmes of the Structural Funds for regional development has been earmarked to support research and innovation.

Under the **EU rural development policy** some 337 million € are provided to support the development of new products, processes and technologies in the agricultural, food and forestry sectors, with additional funds coming from the Leader programme. Investments in broadband infrastructure and other innovation projects in rural areas will be further re-enforced following the Health-Check of the Common Agricultural Policy and as part of the EU Recovery Package.

Within the **Competitiveness and Innovation Framework Programme (CIP)**, the EU has a specific programme dedicated to SMEs and innovation outside the Research Framework Programme with an annual average budget of €225m for the period 2007-2013. A specific amount has been set aside for the take-up of environmental technologies, in particular through co-investment in risk capital funds that provide equity for firms investing in eco-innovation. These venture capital instruments help SMEs gain access to innovation finance.

The Commission also helped Member States and regional authorities to build on synergies between the main EU innovation funding instruments – FP7, CIP and Cohesion policy[14].

3. LESSONS TO BE LEARNT AND CHALLENGES TO BE MASTERED

The Innovation Scoreboard[15] shows clearly that Europe is already today the continent with some of the most innovative countries and regions of the world. If we analyse what these countries and regions have in common, we find a striking pattern. They are usually spending above the average for education, training and lifelong learning, have the highest share of R&D spending in GDP and have instruments to support the uptake of new technologies and

[14] COM(2007) 474, 16.8.2007 – "Competitive European Regions through Research and Innovation – a contribution to more growth and more and better jobs".

[15] http://www.proinno-europe.eu/EIS2008/website/docs/EIS_2008_Final_report.pdf

products in the public and private sectors. Experience also shows that these countries are better prepared to make use of the exchange of best practices and to learn from others. The same holds true for companies: it is not necessarily the absolute amount of R&D spending that matters; it is the innovative climate within an undertaking that makes the difference in competitiveness terms[16]. The challenge today is to replicate these success stories throughout the EU.

Indeed, despite efforts at both EU and Member State level, innovation and entrepreneurship are not yet sufficiently recognised as values everywhere in Europe, while the failure they sometimes imply continues to be stigmatised. New technologies are often met with scepticism, and public debate tends to underplay the importance of scientific insight and evidence and often remains focused on concerns and potential threats to human health or the environment.

At the same time, Europeans are increasingly responsive to the need to master new global challenges, such as security, climate change or the need for more social justice on a global scale. This is clearly an asset, if accompanied by a better understanding of the need to invent, innovate and use new technologies to address these challenges. In this context, demographic change in the European Union will inevitably have strong effects on the political, cultural, social and economic character of our societies. An ageing population, while triggering a shift in demand, may also look at the concept of innovation from a different, perhaps more hesitant perspective. It will be very important to address this issue at an earlier stage and to make sure that the mindset of society remains favourable towards innovation. Otherwise, despite its rich and knowledgeable human resources, the EU runs the risk of being sidelined by its competitors and not reaching the level of excellence needed to secure high living standards. To avoid this, innovation must be accepted and recognised as the key to achieving the EU's strategic policy targets.

Innovation is mainly driven by entrepreneurs. This implies the need to foster a policy and regulatory framework that promotes globally competitive EU industries and rewards investment in research and innovation of both products and processes including innovative forms of work organisation. The social partners have an important role to play in this context. While modern legislation, self-regulation and corporate social responsibility clearly guide such efforts, it remains important to carefully watch new regulations and to ensure that they do not unnecessarily increase burdens on industry or discourage innovation, and that they more broadly promote open and fair global markets.

The role that public authorities can play for innovation must be recognised and built on. The monitoring of Member State innovation policies[17] clearly shows a tendency to a broadening of the scope of their innovation strategies and a trend towards measures with wider societal goals. In spite of these efforts, it appears that the potential for using the public sector's purchasing power to drive innovation remains largely untapped. Given the foreseeable budget constraints, the fact that public services might have to deliver the same or better levels of service with fewer resources must become a powerful engine for innovation. New technologies, in particular ICT, can also help improve the quality, efficiency and responsiveness of public service provision.

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16 See 'Global Innovation 1000', Booz Allen Hamilton, 2005.

17 INNO Policy TrendChart European Innovation Progress Report 2008.

Innovation also needs investors willing to take risks and willing to go beyond short term profit expectations.

Finally, the competitiveness of European industries and their innovation capabilities will particularly depend on access to and mastering of key enabling technologies which are associated with high R&D intensity, rapid innovation cycles, high capital expenditure, and highly-skilled employment. The scope, size and degree of complexity related to the development and deployment of such technologies require consensus among all actors about such technologies, and stronger cooperation and a strategic approach, not only at European level but also by Member States and Regions fostering stronger partnerships between research communities and industry[18].

Removing critical bottlenecks in the framework conditions for entrepreneurs

Despite improvements[19], the EU innovation system continues to suffer from shortcomings that negatively influence the market rewards and incentives for private investment in innovation which as a consequence remains lower than that of our main competitors: the single market needs to be completed in a number of areas, the legal framework for the protection of intellectual property remains incomplete, the venture capital market is fragmented and the level of equity funding low, the standardisation process is not yet sufficiently synchronised with research results and market needs, the knowledge triangle between business, education and research needs to be further strengthened, and the EU still lacks critical infrastructure to enable innovation. Despite progress already achieved, the efforts to increase the capacity of the EU educational systems to contribute to an innovative and agile knowledge society must continue.

An adequate legal framework to protect knowledge properly is a precondition for an innovative society. In the area of **Intellectual Property Rights**, among other things as a result of the failure to introduce a Community patent, the EU is still not providing favourable conditions for the development and diffusion of innovation. The European patent system is costly and fragmented, discouraging innovation compared to the US and Japan[20]. The difference in patenting costs in comparison to these countries is significant and is not being reduced. It is high time to change this situation.

Commission efforts on copyright policy have been aiming to further develop the emerging EU cross-border market for the dissemination of knowledge. The development of new digital products, services and business models, which thrive on openness, needs a supportive and predictable legal framework.

It is necessary to better acknowledge the weight of services as an attribute of modern industrialised countries and their innovation potential for the economy and the society at large. For services innovation to be taken up more widely, it is necessary to increase the level of confidence in new services and to better customise research and innovation support to the specific needs of such services. Innovation also requires completing critical infrastructures

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18 The Commission is planning to present in 2009 a specific communication on future policy orientations for key enabling technologies.

19 See European Innovation Scoreboard 2008 at http://www.proinno-europe.eu/EIS2008/website/docs/EIS_2008_Final_report.pdf.

20 See B. Van Pottelsberghe, 2006 at http://www.solvay.edu/EN/Research/Bernheim/documents/wp06002.pdf.

(such as broadband and electricity grids) and unlocking their potential with new services and applications. Notably, further efforts are needed to promote e-skills and the use of ICT for a sustainable economy and to address the challenges of the future internet, such as software-as-a-service and cloud computing.

Despite significant efforts[21], progress towards improving the international competitiveness and performance of the European venture capital sector — a key provider of finance for innovation — has been slow. The structural deficiencies of the European early-stage finance market persist, including the absence of private investors, fragmentation of the market and low returns. The economic recession is making fund-raising and the exit environment even more difficult.

Enhancing the governance of the EU innovation system

While a number of initiatives have been undertaken by the Community, the needed synergies between policies and instruments at different levels have not yet been created across the European Union. The relatively slow take-off of the recently launched Lead Market Initiative is a good example of this.

The coordination of policies to support innovation at regional, national and EU level has to improve significantly and a better governance system is needed, based on the principles of subsidiarity, but better exploiting the added value of setting common objectives, agreeing on common actions and sharing best practises among Member States. Cooperation with third countries and in particular best practice exchange with the US should also be substantially enhanced.

The level of funding to support innovation centrally at EU level has remained modest both in relation to the EU budget and compared to many national budgets, representing an even smaller share than the 5% of public spending on research under the Research Framework Programme. Even the total of € 67 million available in 2009 to stimulate market uptake for eco-innovation to address resource efficiency and climate change appear modest in view of the importance of these challenges. On the other hand, the increased share of investment allocated to innovation under Cohesion Policy plays an important role to build up research and innovation capacity in the "convergence" regions.

As such, however, there is no lack of innovation support programmes in the EU in terms of numbers. The problem is a lack of critical mass and coherence. Today, innovation support involves seven different Commission services, various agencies and 20 committees with representatives from Member States. A recent public consultation on the effectiveness of public support for innovation suggests a gap between what companies expect and what or how innovation support schemes deliver. The large majority of companies call for quicker procedures, and 75% of the companies surveyed expect simplified rules for participating in EU projects. Indeed, the complexity of Community funding programmes adds to the multitude of schemes existing at national and regional level and makes access to relevant funding difficult. This calls for clear structures and substantial simplification of participation rules for all innovation funding, regardless of its origin. This would strengthen the overall innovation system and enable a more efficient use of funds and instruments, ensuring better participation by SMEs.

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[21] See COM(2007) 853.

4. CONCLUSION

The analysis of the progress achieved in recent years shows that the EU has rightly identified innovation as a key driver for a prosperous future. However, making the EU a vibrant space for innovation requires continuous attention and calls for a better exploitation of the potential of the partnership between the Union and its Member States by taking more focussed and better coordinated actions at all levels.

Therefore, based on the analysis of achievements so far and the lessons learnt presented in this Communication, and as requested by the European Council, the Commission intends to explore the feasibility of proposing to the Member States before spring 2010 a European Innovation Act encompassing all the conditions for sustainable development and which would form an integral and crucial part of the future European reform agenda.