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Commission

State of the Innovation Union

2011



*Research and
Innovation*

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State of the Innovation Union 2011

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Parliament, the Council, the European Economic
and Social Committee and the Committee of
the Region

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CHAPTER 1

The Innovation Imperative

Innovation Union¹, a flagship initiative under the Europe 2020 strategy, is an integrated innovation strategy built around 34 specific commitments. Based on a broad concept of innovation, encompassing the private, public and third² sectors, it aims at ensuring that innovative ideas are translated into new goods and services that create growth and jobs.

The first year of Innovation Union has seen the economic and financial crisis reaching a new phase. The recovery is at risk and public confidence has deteriorated across different sectors of the economy. The pressure to cut investments in future sources of economic growth is huge.

At the same time, the shift in economic power from West to East is accelerating. Both the Innovation Union Scoreboard and the Innovation Union Competitiveness report³ highlight the fact that Europe's research and innovation performance has declined over recent years, causing a broadening of the already sizeable innovation gap vis-à-vis the US and Japan. Furthermore, China, India and Brazil have started to rapidly catch up with the EU by improving their performance 7 %, 3 % and 1 % faster than the EU year on year over the last five years.

This report will argue and show that:

- Innovation is our best means to help put the European economy back on track and tackle societal challenges in the global economy; achieving the Innovation Union objectives, our innovation imperative, has become even more important and urgent than last year;
- Innovation Union had an impressive start with strong endorsement from the European Parliament⁴, the European Council⁵ and the Competitiveness Council⁶;
- Overall, good progress has been made in launching the 34 Innovation Union commitments. Based on wide-ranging debates with stakeholders, legislative proposals have been tabled according to plan and pilot actions have been launched and tested⁷;
- The Commission is proposing to increase investments in research, innovation and education in support of the EU's pro-growth agenda. The Horizon 2020 proposal enacts many of the Innovation Union commitments.
- There has been good track record on putting in place the conditions that will smooth the path from idea to market. In particular, the Commission has already tabled legislative proposals for unitary patent protection and for modernising standard-setting.



- The Commission has been endowed with a strong mandate to put forward measures for completing European Research Area by 2014. A public consultation has been carried out to prepare by the middle of 2012 the proposal for an ERA Framework that would create a highly efficient and integrated research system in Europe.
- The challenge for the next implementation phase will therefore be that all actors take collective responsibility for Innovation Union delivery, adopt the proposals tabled by the Commission and translate firm political commitments into action both at national and at EU level.

This report focuses on key policy actions of 2011. A short overview on the state of play of all 34 commitments of the Innovation Union is provided in the annex, while details can be consulted through the Innovation Union Information and Intelligence System (I3S) accessible at <http://i3s.ec.europa.eu/home.html>.

It is placed in the context of the other flagship initiatives of the Europe 2020 strategy for delivering smart, sustainable and inclusive growth and the Single Market Act adopted in April 2011⁸. They are all interlinked and mutually reinforcing.



1. Europe 2020 Flagship Initiative Innovation Union, SEC(2010) 1161.
 2. The third sector refers to a wide range of organisations that are positioned between market and state.
 3. Innovation Union Scoreboard 2010, www.proinno-europe.eu and Innovation Union Competitiveness report 2011 http://ec.europa.eu/research/innovation-union/index_en.cfm?section=competitiveness-report&year=2011; Also an analysis of competitiveness performance broken down to the Member State level revealed that many of them should step up their innovation efforts: SEC(2011) 1187.
 4. EP resolution 2010/2245 INI, 27.4.2011.
 5. Conclusions of 4.2.2011.
 6. Competitiveness Council conclusions, 26.11.2010.
 7. e.g. public consultations on future EU research and innovation funding, on European Research Area, on modernisation of public procurement policy, and others.
 8. Communication: 'Single Market Act. Twelve Levers to Boost Growth and Strengthen Confidence', COM(2011) 206 final.

CHAPTER 2

Delivering growth and jobs through Innovation

1. Making Europe more robust against the crisis

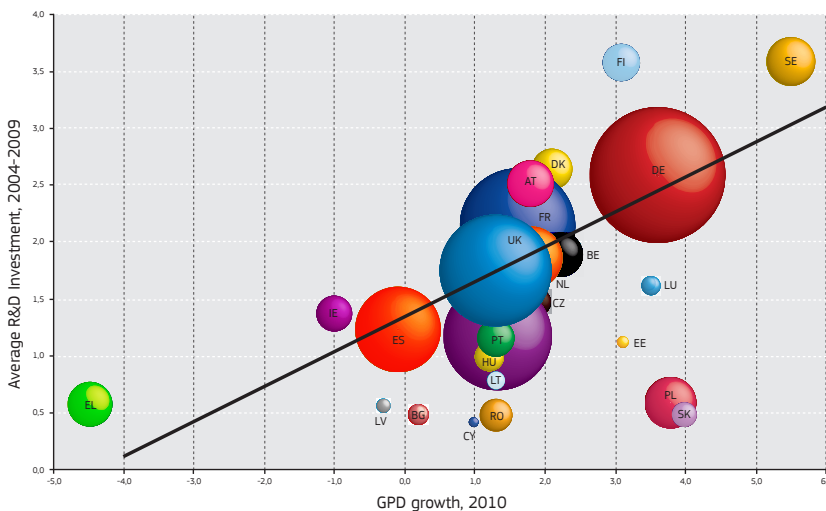
The challenges we face in terms of sustainability of public finances, economic imbalances and growth-enhancing reforms are driving the EU policy agenda⁹.

There are indications that strong budgetary commitment to education, research and innovation — smart fiscal consolidation¹⁰ — combined with an innovation-friendly business environment is a very effective way to pull Europe out of the crisis.

It can be observed that, in general, Member States that traditionally invest more in R&D and education weathered the recent economic turmoil better (see Figure 1). Investments in R&D and education increase the chances to smooth the adverse impact of the crisis while offering the tools to bounce back quicker when recovery takes place.

However, the objective of restoring growth and improving the welfare of European citizens requires a combined set of policies influencing the overall framework conditions for innovation and the sound functioning of product markets. Again, there are indications that better framework conditions are related to a more robust recovery (see Figure 3) and higher economic growth in the longer run .

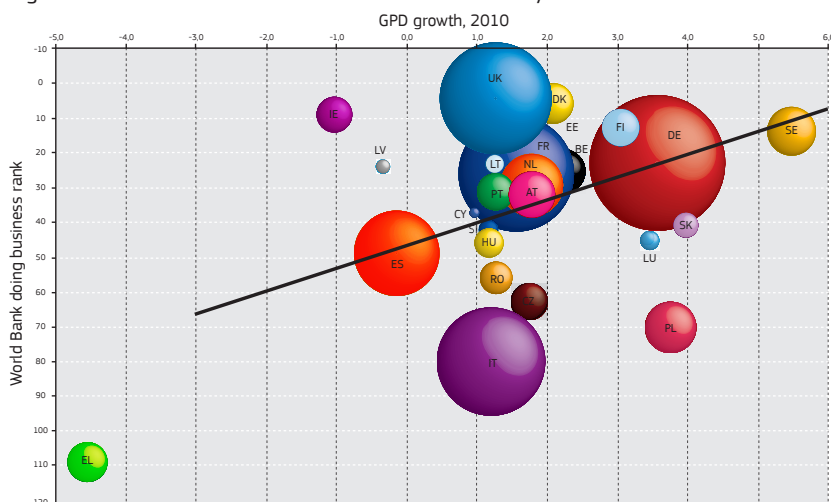
Figure 1 R&D investment and economic recovery



Note (1) Malta and Slovenia are not visible on the graph



Figure 2 Business environment and economic recovery



Note (1) Bulgaria is not visible on the graph

Sources: DG RTD-JRC own calculations based on Eurostat and World Banks ranking data.

2. Reforming national research and innovation systems

Member States were invited to conduct a self-assessment of their innovation systems and policies¹² that should also feed into the Europe 2020 strategy.

Overall, the National Reform Programmes include a breadth of measures which offer a good starting point for stimulating innovation. However, as assessed by the Commission in its policy guidance under the first 'European semester', national programmes often lack ambition and specificity. Additional efforts are needed to

9. José Manuel Barroso, State of the Union, 28 September 2011.

10. 'Smart' fiscal consolidation means protecting and reinforcing investments in the sources of future growth, singling out research, innovation and education as growth-friendly expenditure.

11. The linear interpolation indicates the correlation between the variables in the Figures. The statistically significant correlation coefficients are: 0.66 for R&D-GDP and 0.39, for Business environment. The size of the bubble reflects the size of the economy (as a share of EU GDP). Eurostat data are taken from 'Science and technology Indicators'. Framework conditions are measured by the ranking provided by the World Bank's 'Doing Business Report'. A 5-year average investment is used as a proxy for past investment given the relative stability of R&D measured as ratios (over GDP). Figures 1 and 2 provide evidence based on correlation while any robust causal assessment would require a more in-depth econometric analysis based on a number of additional economic and institutional factors (such as e.g. catching-up effect).

12. Innovation Union commitment No. 33.

reach the EU's 3 % R&D target and Member States need to do more to protect and prioritise expenditure on research and education and the key infrastructures to sustain future growth¹³.

A few trends could be detected from the announced reforms with respect to research and innovation (presenting a few, non-exhaustive examples):

- (1) A majority of Member States are in the process of improving their governance structures and strategic guidance for research and innovation, which is often accompanied by a gradual integration of the two policy fields and increased targeting of public funding on selected areas. At this stage, however, very few countries are explicitly targeting societal challenges as their main priority.
 - Germany has updated its High Tech Strategy 2020 to strengthen the demand for research and innovation with greater emphasis on societal challenges;
 - Spain has taken a comprehensive approach to reforming its research and innovation policy with a new Science, Technology and Innovation Act and recent National Innovation Strategy;
 - Slovakia has appointed a High Government Representative for the knowledge economy and created two agencies implementing research and innovation policy measures.

- (2) A majority of Member States are engaged in improving framework conditions or financial support for research and innovation, in particular through R&D tax incentives, and different forms of support to innovative SMEs, including venture capital. An increasing number of Member States are paying attention to demand-side innovation policy instruments, in particular public procurement¹⁴. So far, only a few countries have an approach that seeks to integrate demand- and supply-side instruments.

- Belgium has increased tax credits for research and innovation and plans to offer incentives for the creation and development of new science-based companies as spin-outs of large enterprises or spin-offs from research institutions
- Denmark has integrated demand-side aspects in programmes supporting public- private collaboration. It has established a Business Innovation Fund that supports business opportunities within green growth and welfare areas;
- Poland has introduced training measures targeting 500 procurers, 1500 representatives of SMEs and 1000 business intermediary organisations to strengthen its use of public procurement of innovative products and services.



To better explore synergies and pool risks and resources, coordination with EU-level initiatives should be considered

(3) In terms of budgets allocated to R&D, only a limited number of Member States —including Denmark, France, Germany and Sweden — have launched new funding initiatives, while some others such as Slovenia are earmarking a substantial share of Structural Funds for research and innovation.

It appears that countries committed to increasing their R&D funding are also the ones which consider the broadest spectrum of growth-enhancing measures in line with the Innovation Union areas of action, and are already high or aspiring innovation performers.

- France is investing an additional €21.9 billion over the period 2009-2014 in higher education and research ('Investissements d'Avenir' initiative);
- Germany has committed to increasing public budgets for research and education by €12 billion over the period 2010-2013;
- Slovenia is increasing the R&D budget through allocation of Structural Funds to R&D and innovation.

A recent survey¹⁵ on public R&D spending indicates that ambitious political commitments in terms of R&D spending are being made by modest innovators such as Romania, Bulgaria and Latvia and moderate innovators like Hungary, Poland and Slovakia. In contrast, a majority of the innovation followers¹⁶ and moderate innovators¹⁷ have recently started or intend decreasing their efforts.

There is clearly a risk of widening the innovation divide between the Member States. It is important that modest innovators sustain their recent positive commitments and the middle-of-the-range innovators are urged not to decrease further their R&D public investments and to start planning to recover lost momentum. Only in this way can Europe meet its ambition on research and innovation targets.

3. More and better EU funding for research and innovation

The Innovation Union seeks to deliver challenge-guided, streamlined and simplified EU research and innovation funding. In its proposal for a 'Budget for Europe 2020'¹⁸, the Commission envisages substantial re-orientation of the future EU budget towards research and innovation, bringing together current research and innovation programmes into a single strategic framework — Horizon 2020 — to fund the whole innovation cycle¹⁹. Many of the Innovation Union commitments are enacted upon through Horizon 2020, notably: more focus on societal challenges, a strengthened approach to SMEs, and stronger support to market uptake of innovation, including by means of procurements, standard-setting and loan and equity financing²⁰. A number of simplification measures for the current Framework Programme (FP7) have already been introduced early 2011, and Horizon 2020 will show more far reaching simplification.

13. Communication: 'Concluding the first European semester of economic policy coordination', COM(2011) 400 final.

14. For more information on trends in demand-side innovation policies in Europe, see the recently published report: http://ec.europa.eu/enterprise/newsroom/ct/_getdocument.cfm?doc_id=7011

15. European Research Area Committee (ERAC) 2011 questionnaire on R&D investments and policy measures by EU Member States and Associated States.

16. Austria, Estonia, Ireland, Luxembourg, the Netherlands, Slovenia, the United Kingdom.

17. Greece, Italy, Portugal, Spain.

18. COM(2011) 500 and SEC(2011) 867 and 868 of 29.6.2011.

19. Innovation Union commitments No. 6 and 7.

20. Notably Innovation Union commitments No. 6 and 7, but also 10, 16, 17, 20, 27.

In parallel, the existing EU research and innovation funding is already being focused on Innovation Union priorities. The Commission is piloting new approaches with Horizon 2020 in mind, to gain experience and facilitate a smooth roll-out. This is the case, for example, for a new SME targeted instrument²¹ that would fill the funding gap for early-stage high-risk research and innovation, stimulate break-through innovations and increase exploitation of R&D results. Under the Marie Curie Industry-Academia Partnerships and Pathways, aiming explicitly at creating bridges between the academic world and enterprises, 50 % of businesses participating in the projects are SMEs. Another example is support for pre-commercial procurement and public procurement of innovative products and services. 2012 and 2013 will therefore see significant experimentation and fine-tuning of activities.

Also, the post-2013 Cohesion Policy will have an increased focus on research and innovation. The related Commission's legislative package was adopted on 6 October 2011. Among the major hallmarks of the proposals is greater conditionality in the use of EU Cohesion Policy funds. In particular, the support will be conditional on the existence of a national or regional strategy for smart specialisation which complies with the features of well-performing national or regional research and innovation systems²². Furthermore, regions should allocate a minimum share of the European Regional Development Fund to the three investment priorities concerning research and innovation, SMEs and low-carbon economy. As a general rule, the minimum total allocated to these three priorities at national level should be at least 80% in more developed regions and transition regions and at least 50% in the less developed regions²³.

4. Working in partnership to address societal challenges

To overcome fragmentation of efforts and slow pace of change, Innovation Union announced European Innovation Partnerships (EIPs)²⁴, mobilising actors across the innovation cycle and across sectors around an overarching target in order to speed up innovative solutions to societal challenges.

2011 has seen the concept being tested with a pilot European Innovation Partnership on 'Active and Healthy Aging' (AHA). The Partnership aims to increase by two the average number of healthy life years in the EU by 2020, by securing a triple win for Europe:

- improving the health status and quality of life of European citizens, with a particular focus on older people;
- supporting the long-term sustainability and efficiency of health and social care systems; and
- enhancing the competitiveness of EU industry through an improved business environment providing the foundations for growth and expansion of new markets.

Both the Council²⁵ and the Parliament²⁶ have welcomed the objectives of EIPs and supported the launch of the



pilot to test the concept and assess how it can be best implemented. The first assessment of AHA governance and processes²⁷ suggests that the pilot was very successful in mobilising stakeholders in the preparatory phase. It also clarified how an EIP can reinforce the coherence of our research and innovation priorities, and how it can focus, streamline and simplify our actions, while pointing to measures to bridge gaps and accelerate the uptake of innovations. It made it clear that EIPs do not supersede or replace other existing initiatives or instruments, nor are they a substitute for existing institutional decision-making mechanisms.

The Strategic Implementation Plan (SIP) of AHA was issued in November 2011. The Plan outlines a set of priority areas including key actions for immediate implementation. Other EIPs are under preparation: 'Raw Materials', for secure and sustainable supplies, 'Agricultural Productivity and Sustainability', to foster a competitive and sustainable agriculture, 'Water-efficiency', to secure the needs of European citizens, industry and agriculture with regard to this vital resource and 'Smart Cities', tackling major energy challenges.

5. Maximising social and territorial cohesion

To ensure that all regions are involved and to avoid an 'innovation divide', Innovation Union proposes to make better use Structural Funds for research and innovation and to pilot activities on social and public sector innovation while mainstreaming social innovation in EU funding programmes²⁸.

In June 2011, the Commission launched a 'Smart Specialisation Platform'²⁹ bringing together expertise from universities, research centres, regional authorities, businesses and Commission services³⁰, in order to facilitate the formulation and implementation of smart specialisation strategies by national and regional governments. Interactions between Horizon 2020 and Cohesion Policy funds will be strengthened, including through complementary measures under Horizon 2020 aimed at widening participation, supporting networking, policy learning and advice.

In March 2011, the Commission launched the Social Innovation Europe Initiative³¹ with the aim of supporting social innovators in creating new goods and services and developing new working methods that create social value and impact for organisations and customers. The initiative also helps in locating funding and know-how to scale up social innovation from idea to project and even to a new business. Social innovation is also one of the tools that apply in the Social Business Initiative Communication, adopted by the Commission on 25 October 2011³². This initiative sets out 11 actions to support the growth of social entrepreneurship and business in Europe, such as in financing, adapting legal frameworks, labelling (and therefore awareness and visibility) and public procurement. The EU is already funding substantial research activities on social innovation through FP7, and social innovation will play an important part in addressing the societal challenges targeted by Horizon 2020.

To develop better understanding of public sector innovation, the Commission is preparing the first European Public Sector Innovation Scoreboard which will be available in 2012. The public sector needs to embrace innovation and lead by example. Governments have to be proactive in driving innovation and entrepreneurial in spirit to provide more and better services and infrastructures to citizens and businesses, while increasing cost efficiency. To reach this ambition, the public sector has to move from being a patron of R&D solely to also translating its purchasing power into a demand pull for innovations. There is a wealth and variety of European ideas and good examples at all levels of administration.

The consultation with social partners to examine how the knowledge economy can spread to all occupational levels and all sectors has not taken place yet³³.

21. The February 2011 European Council invited the Commission to explore the feasibility of an SBIR-like (Small Business Innovation Research) scheme.

22. Proposal for a Regulation of the European Parliament and the Council laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund covered by the Common Strategic Framework, COM(2011) 615.

23. Proposal for a Regulation of the European Parliament and the Council on specific provisions concerning the ERDF and the Investment for growth and jobs goal, COM(2011) 614.

24. Innovation Union commitment 29.

25. European Council of 4.2.2011; Competitiveness Council conclusions on 26.10.2010 and 9.3.2011.

26. European Parliament resolution of 11.11.2010 and report of 11.5.2011.

27. Commission Staff Working Paper, 'The Pilot European Innovation Partnership on Active and Healthy Ageing (AHA) First experiences on governance and processes', SEC(2011) 1028.

28. Innovation Union commitments No. 24, 25, 26 and 27.

29. <http://ipts.jrc.ec.europa.eu/activities/research-and-innovation/s3platform.cfm>

30. Examples include the Regional Innovation Monitor (<http://www.rim-europa.eu/>) and the European Cluster Observatory (<http://www.clusterobservatory.eu/index.html>).

31. www.socialinnovationeurope.eu

32. Communication from the Commission on Social Business Initiative, SEC(2011) 1278.

33. Innovation Union commitment No. 28.

CHAPTER 3

Strengthening Europe's knowledge base and reducing fragmentation

1. Getting top talent for Europe

To ensure a sufficient supply of highly qualified workers, the Innovation Union is to offer researchers more attractive careers and remove obstacles to their mobility across sectors and countries. Demand in Europe for highly qualified people is predicted to rise by almost 16 million in the period up to 2020³⁴.

Education and training systems are the starting point. In September 2011³⁵, the Commission presented a reform strategy for modernising higher education, including through increasing graduate numbers; improving teaching quality and adapting curricula and delivery of education programmes to the changing needs of the wider economy; training more researchers; and improving the links between research, education and innovation.

Researchers are at the core of the knowledge-intensive economy. The EU needs an estimated one million new research jobs to achieve the 3 % R&D intensity target, mostly in the private sector. Member States have been called upon to develop national strategies to train enough researchers to meet their national R&D targets and to promote attractive employment conditions³⁶. The Commission will closely monitor developments and give a first assessment of progress in spring 2012.

Seeking to make the EU more attractive to talent from third countries, the Commission will prepare a monitoring report in 2012 on the application of the Scientific Visa Directive³⁷. A recent study points to a substantial increase in the number of permits issued under the Directive: from 239 in 2007 to 3713 in 2010. However, the overall take-up remains relatively low and concentrated in six Member States.

To help students and researchers make informed study or work choices, enable institutions to identify and develop their strengths, and support policy makers in developing effective strategies for education, research and innovation, the Commission will launch in 2012 an initiative to implement a user-driven multidimensional university ranking³⁸ and transparent information tool, with first results expected in 2013.

With the objective of bringing together business and academia to address innovation skills gaps, the Commission launched in 2011 the Pilot Project for Knowledge Alliances³⁹. Out of 94 proposals received, the three projects that were selected aim at designing new curricula and courses, developing innovative ways of delivering education and knowledge, and will help universities to modernise by moving towards inter-disciplinary, entrepreneurship and stronger business partnerships. These pilots will provide useful insights into the post-2013 'Erasmus For All' programme.



2. Delivering the European Research Area

Achieving a well-functioning European Research Area (ERA) in which researchers, scientific knowledge and technology can circulate freely is of utmost importance⁴⁰. Insufficient cooperation and coordination coupled with various systemic failures lead to significant underperformance in the European research system as a whole. As well as increasing cooperation and coordination, the ERA will boost competition, which enables excellence.

With the European Council conclusions of 4 February 2011, Member States are clearly committed to completing the ERA by 2014. A stakeholder consultation is being carried out in order to propose, in 2012, an ERA Framework and supporting measures to remove obstacles to mobility and cross-border cooperation⁴¹. The overall objective of the ERA Framework is to improve the coherence and compatibility of all Member State and EU research policies, programmes and activities.



The topics to be taken into account in developing the Framework include quality of doctoral training, mobility of researchers, cross-border operation of research performing organisations, dissemination, use and transfer of research results, research infrastructures and consistency of international cooperation strategies and actions⁴².

Several EU initiatives and instruments have been deployed with a view to addressing the issues that are crucial to enhancing researchers' careers and mobility.

34. Commission Working Document on recent developments in European high education systems, SEC(2011) 1063, p. 30.

35. Communication from the Commission on an agenda for the modernisation of Europe's higher education systems, COM(2011) 567.

36. Innovation Union commitment No. 1.

37. Innovation Union commitment No. 30.

38. Innovation Union commitment No. 2.

39. Idem.

40. Innovation Union commitment No. 4.

41. http://ec.europa.eu/research/era/consultation/era_consultation_en.htm

42. See the document accompanying the public consultation on ERA framework http://ec.europa.eu/research/consultations/era/consultation_era.pdf

- (a) To ensure that more doctoral candidates are better trained and equipped with the skills to work more easily across countries, employment sectors and disciplines, the Commission has proposed Principles for Innovative Doctoral Training in Europe⁴³. These principles provide a reference framework based on existing best practice⁴⁴. They offer guidance for the funding of European and national researchers' training while at the same time preserving flexibility and autonomy for institutions and doctoral candidates. To enhance the quality of doctoral training in Europe, the Commission has launched under the Marie Curie Actions two new doctoral initiatives directly addressing innovative curricula in doctoral programmes: the European Industrial Doctorates and Innovative Doctoral Programmes
- (b) To make career structures more comparable across employment sectors and countries and facilitate mobility between academia, industry and other employment areas, the Commission is promoting a European Framework for Research Careers. It provides a reference point for researchers and employers by capturing the necessary competences of researchers at four different career stages⁴⁵. To spread the best practices in training and career development of researchers, the Marie Curie co-funding mechanism has supported so far 81 programmes at regional, national and international levels. The first results show an uptake of high-quality standards for researchers' careers and employment conditions.



- (c) To enhance the attractiveness of the research profession and facilitate mobility, the Commission is providing guidance to universities and other employers wishing to set up a European fund for supplementary pensions for researchers. Such a fund would boost labour mobility by making it easier for researchers to take their supplementary pension assets with them when starting in a new job in another country. Interested employers should be able to set up consortia in 2012, with the funds expected to start running in 2013.
- (d) As a first step towards ensuring that recruitment procedures for researchers are more open and transparent, the Commission services have developed a common strategy⁴⁶, in close cooperation with Member States, to boost the publication of job vacancies for researchers on the EURAXESS Jobs portal⁴⁷. Member States should step up efforts to ensure that all publicly funded researchers' positions are openly advertised online and that institutions apply open recruitment procedures.

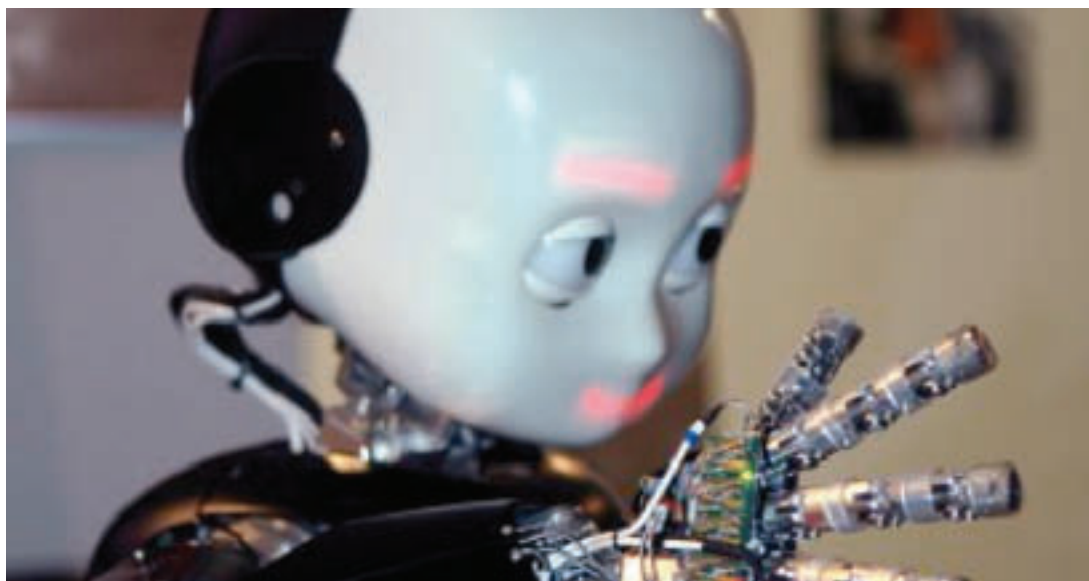
Ground-breaking research and innovation also require world-class research infrastructures. The Innovation Union has a 2015 target to complete or launch the construction of 60 % of the priority European research infrastructures identified by the European Strategy Forum for Research Infrastructures (ESFRI)⁴⁸. Out of the 48 priority projects, 10 are in the implementation phase and 16 more are proceeding towards the implementation phase, i.e. reaching a 54 % target by the end of 2012.

The research Framework Programme supports the preparatory phase of all the ESFRI projects and also to a more limited extent their implementation phase. Structural Funds are being mobilised to complete the construction phase of the priority research infrastructures. For example, €236 million from Structural Funds

are being used to construct Beamlines facilities of the Extreme Light Source (ELI), located in the Czech Republic. The Commission is also advising Romania and Hungary on how to mobilise the Structural Funds for the other parts of ELI in these two countries.

The ESFRI research infrastructures are a prime example of how the EU and its Member States work together and pool resources on projects of common European interest.

The Commission is also assisting the Member States in using the European Research Infrastructure Consortium (ERIC) as a legal framework for setting up the pan-European research infrastructures. The first ERIC status was awarded in March 2011 to the Survey of Health, Ageing and Retirement in Europe (SHARE) facility that will lead to better understanding of the impact of ageing on European societies.



3. Promoting the European Institute of Innovation and Technology as a model of innovation governance in Europe Working in partnership to address societal challenges

To better integrate the innovation cycle, the European Institute of Innovation and Technology (EIT) brings together higher education institutions, research organisations and businesses in new types of partnerships — Knowledge and Innovation Communities (KICs) —operating in the areas of sustainable energy (KIC InnoEnergy), climate change adaptation and mitigation (Climate-KIC) and future information and communication society (EIT ICT Labs).

The first results are already visible in terms of business creation (five start-ups since January 2011) and a first EIT-backed Masters' course organised by KIC InnoEnergy, with 155 students. By the end of 2011, the Commission will adopt the EIT's Strategic Innovation Agenda⁴⁹. It will focus on consolidating the three existing KICs and gradually setting up new ones, which will address major societal challenges in line with the Horizon 2020 objectives.

43. See: COM(2011) 567.

44. These reflect the Salzburg Principles of EUA, good practice in Member States and the Marie Curie Actions.

45. R1) First Stage Researcher, R2) Recognised Researcher, R3) Established Researcher and R4) Leading Researcher.

46. The Jobs Strategy was endorsed by the ERA Steering Group on Human Resources and Mobility in November 2010.

47. <http://ec.europa.eu/euraxess/index.cfm/jobs/index>

48. Innovation Union commitment No. 5.

49. Innovation Union commitment No. 9.

CHAPTER 4

Getting good ideas to the market

Enterprises are at the heart of innovation since they detect market opportunities and develop ideas for innovative solutions in order to seize these opportunities. However, Europe's entrepreneurs face multiple obstacles and adverse framework conditions in getting ideas to the market. Innovation Union is geared to systematically removing these obstacles and creating a single market for innovation.

Europe needs a better balanced demand and supply policy mix⁵⁰ with faster and modernised standard-setting, more affordable patents, more public procurement of innovative products and services, better access to capital and a genuine European knowledge market.

Those have been the priorities for Commission action in 2011 and significant progress is being achieved with proposals on unitary patent protection and standard-setting already adopted by the Commission. Two commitments in this area are behind schedule: the screening of the regulatory framework in key areas, starting with those linked to eco-innovation, and an eco-innovation action plan⁵¹ which will be presented in December 2011.

1. Improving access to finance

Finding suitable investors represents, especially for young and knowledge-driven companies, a crucial step towards strategic expansion of business activities. Investors often include public authorities that reduce innovation-related risks through aid schemes or private venture capitalists that provide start-up companies with a cash injection in exchange for equity.

Taken as a share of GDP, venture capital investment in the United States is four times higher than in the EU. Furthermore, European investment can be spread too thinly as European venture capital funds invest in twice as many companies as their US counterparts⁵². The Commission intends to present, by the end of the year, an initiative for a new European venture capital regime that will allow venture capital funds to raise capital in all 27 Member States on the basis of a single registration⁵³. The Commission will also endeavour to eliminate any tax treatment that disadvantages cross-border venture capital investments and to reduce the administrative burden. These will be part of the wider Commission Action Plan to Improve Access to Finance for SMEs.

Moreover, the Commission has appointed the Chairman of the British Business Angels Association as the leading figure to chair an expert group. The expert group is tasked with formulating recommendations on



how to enhance the cross-border matching of innovative firms with suitable investors⁵⁴. Their findings will be presented in the course of 2012.

The current Risk Sharing Finance Facility (RSFF)⁵⁵ and the financial instruments under the Competitiveness and Innovation Programme (2007-2013) have attracted a significant increase in private finance and will be expanded in Horizon 2020 and the Business Competitiveness and SMEs programme in 2014-2020⁵⁶. In line with the Commission's overall objective of 'less and better' state aid, state aid is declining relative to GDP while state aid for research, development and innovation continues to steadily increase, and now represents nearly one tenth of public expenditure in this field. In August, the Commission took stock of the functioning of the Framework that controls state aid in this area⁵⁷. The next step is a wide-ranging consultation to help prepare the revision of the current Framework in 2013.

2. *Protecting and enhancing the value of intellectual property and boosting creativity*

Given the cost and complexity of patenting in Europe, one of the targets of Innovation Union is that the first EU patents should be delivered in 2014⁵⁸ and the exploitation of Intellectual Property Rights (IPR) in innovative products and services should be promoted⁵⁹. Striving for a strategic and balanced approach to policies that affect intellectual property assets, the Commission adopted in May 2011 a blueprint for creating a single market for intellectual property⁶⁰.

Following the failure of Member States to reach agreement on an EU patent, in March 2011, the Commission produced a proposed legislative package for unitary patent protection in a smaller territorial area⁶¹. This was prepared in response to a request from a group of 25 Member States which had chosen to work together via enhanced cooperation in order to overcome the several decades-long political impasse on the establishment

50. See also Lead Market Initiative http://ec.europa.eu/enterprise/policies/innovation/policy/lead-market-initiative/final-eval_en.htm

51. Innovation Union commitments No. 15 and 18.

52. Kelly R. (2011): 'The performance and prospects of European Venture capital, European Investment Fund'; Working Paper 2011/9, EIF Research & Market Analysis

53. Innovation Union commitment No. 11.

54. Innovation Union commitment No. 12.

55. RSFF was established in mid-2007 as a novel debt-financing instrument under FP7.

56. Innovation Union commitment No. 10.

57. Innovation Union commitment No. 13; Commission Staff Working Paper, 'Mid-term review of the R&D&I framework', 10.8.2011 http://ec.europa.eu/competition/state_aid/legislation/rdi_mid_term_review_en.pdf

58. Innovation Union commitment No. 14.

59. See also European Council conclusions of 4 February 2011, inviting the Commission to explore possibilities to develop an IPR instrument to enhance the value of intellectual property rights.

60. Communication from the Commission, 'A Single Market for Intellectual Property Rights', COM(2011) 287 final.

61. Proposal for a Regulation of the European Parliament and of the Council implementing enhanced cooperation in the area of the creation of unitary patent protection and Proposal for a Council Regulation with regard to the applicable translation arrangements, COM(2011) 215 and 216 final.

of a single patent. The proposed legislative package will benefit all European companies by reducing patenting costs in Europe by up to 80 %. While the expenses (including translation) for patent protection covering the whole European Union currently can amount to €32000, they would drop, after a transitional period, to €680 for a European patent with unitary effect in 25 Member States. The political agreement should be reached by mid 2012.

To facilitate the emergence of a genuine European knowledge market for patents and licences⁶², the Commission investigated a set of options for an IPR valorisation instrument at EU level, in response to the invitation by the European Council. During 2011 an expert group and a study addressed the quantification of underexploited patents in Europe, their innovation potential and the strengths and weaknesses of a set of potential initiatives, including the creation of a financial market for IPR. The conclusions of this work will be published before the end of the year⁶³. Based on these, the Commission plans to engage in a debate with Member States in 2012 to shape further actions.

Innovation Union is about pursuing a broad concept of innovation, including new business models, design and creativity, and service innovation. This requires new policies and tools that specifically aim at capitalising on Europe's creative potential. In December 2011, the European Commission establishes the European Creative Industries Alliance⁶⁴, a cross-sectoral policy initiative that will intensify the policy dialogue between national and regional policy-makers, test new tools and leverage more and better support for creative industries and other industries benefiting from creative industries.

Finally, there is a growing demand for products that stand out in their user-friendliness and appeal. The Commission has set up the European Design Leadership Board⁶⁵ that will make proposals to strengthen the role of design in European innovation policies⁶⁶.

3. Accelerating and modernising standard-setting

Uniform European and international standards, adopted swiftly, are important for fostering innovation in fast-moving markets. In June 2011, the Commission presented a standardisation package⁶⁷ aiming to modernise European standardisation legislation and policy in the face of present and future challenges.

Standard-setting processes will be accelerated by 50 % so as to respond better to the needs that accompany rapid technological advances. The Commission and European standardisation bodies are currently discussing performance indicators to achieve the target by 2020. Standardisation needs will be better anticipated through priority-setting in an annual work programme and through foresight studies. In addition, the package will also include a light and fast way to recognise globally established ICT standards, which is increasingly important, for example, for European public procurers. By 2013, the Commission will launch an independent review of the European standardisation system. The Commission also continues to work on better integration of standardisation in the research Framework Programme⁶⁸.



4. Putting the power of the public purse to innovation

With an estimated 19.4 % of the European Union's GDP in 2009⁶⁹, public procurement has an immense potential to pull EU innovations to the market, support lead customer and catalysing effects, and thus provide innovative firms with a head start in the global markets. However, this potential is largely underused in the European Union. According to a recent evaluation⁷⁰, only 22 % of the contracting authorities surveyed indicated that they included innovation within their procurement strategy and procedures.

The Commission's proposal that Member States and Regions set aside dedicated budgets for public procurement of innovative products and services has not been taken up by the Council, even though the proposed target, €10 billion per year, would represent a modest 0.44 % of total public procurement in Europe. Nevertheless, some action has been taken. Spain, for example, introduced a 3 % quota for public procurement of innovative products and services in its procurement law of 8 July 2011.

Seeking to respond more effectively to such challenges, in December 2011 the Commission will present its proposals for revision of the EU public procurement law that should facilitate procurement of innovative products and services and cross-border joint procurement.



In parallel, the Commission has also launched pilot projects for transnational cooperation on procurement for innovative products and services. These projects together with a feasibility study will prepare the ground for increasing and fine-tuning the future EU-level support, notably in Horizon 2020, that will help Member States to pool their financial and human resources to unleash the potential of public demand for innovative solutions.

62. Innovation Union commitment No. 22.

63. Forthcoming expert group and study reports at http://ec.europa.eu/enterprise/index_en.htm

64. Innovation Union commitment No. 19.

65. See Members: http://ec.europa.eu/enterprise/policies/innovation/policy/design-creativity/edii_en.htm

66. Innovation Union commitment No. 19.

67. Communication from the Commission on a strategic vision for European standards and Proposal for a Regulation on European Standardisation, COM(2011) 311 and 315 final.

68. Innovation union commitment No. 16.

69. European Commission (2010): Public procurement indicators 2009. http://ec.europa.eu/internal_market/publicprocurement/docs/indicators2009_en.pdf

70. Evaluation report, SEC(2011) 853, June 2011.

71. Innovation Union commitment No. 17.

CHAPTER 5

Leveraging our policies externally

Competition in today's world is more and more about knowledge and innovation. Europe's competitors have taken strategic steps in this direction with innovation featuring high on their lists of national priorities⁷².

One ambition of Innovation Union is that the EU and its Member States treat scientific cooperation with third countries as an issue of common concern and develop joint strategies⁷³.

In line with these commitments the EU and Member States have developed in the Strategic Forum for International Science and Technology Cooperation (SFIC) three pilot initiatives (with India, China and the US).

A joint EU/Member States initiative aims to raise the attractiveness of Europe as a destination for research, particularly compared to the US. Attracting top talent from the US to Europe, offering excellence and capitalising on advanced European technology centres ought to redress transatlantic mobility.

With India a Strategic Research and Innovation Agenda is under preparation to leverage existing bilateral S&T cooperation. A central element is aimed at building strong links between European and Indian centres of excellence to develop viable and innovative solutions for societal challenges in fields like water, bio-mass, energy or health.

With regard to China, common priorities for EU and Member States are currently being identified for purposes of more coordinated multilateral cooperation with China and to improve interoperability of bilateral programmes, funding schemes and rules (including IPR issues).

These pilot initiatives, built on the new strategic partnership of the EU and its Member States, will improve the way in which we cooperate strategically with key partner countries and will leverage Europe's research and innovation performance externally.

72. US: <http://www.compete.org/about-us/initiatives/> http://www.nsf.gov/about/performance/strategic_plan.jsp

China: <http://www.most.gov.cn/eng/index.htm>

India: http://www.dst.gov.in/whats_new/press-release10/pib_10-3-2010.htm

73. Innovation Union commitment No. 31.

74. Horizon 2020, new Cohesion policy, reform of public procurement legislation, a new regime for venture capital, standardisation package and legislative proposals for a unitary patent protection.

75. European Council conclusions, 4.2.2011

76. Share of fast-growing innovative firms in the economy; the results of the first data collection are currently being discussed with Member States. A second data collection exercise will follow in 2012.

CHAPTER 6

Conclusions and next step

In 2011 research and innovation have been prominent topics in many institutional stakeholder discussions. Concrete actions have been initiated and proposals are, or will shortly be, on the table. Horizon 2020 proposal embraces the Innovation Union and will be a key tool for implementing the Innovation Union commitments.

Out of the 34 Innovation Union commitments, two have not been taken up: at national level, dedicating procurement budgets to innovative products and services and, at EU level, consulting social partners on bringing the knowledge economy to all occupational levels. Two more actions are delayed: regulatory screening and the eco-innovation action plan. The Commission will step up its efforts to launch the delayed activities promptly and calls on Member States to intensify their efforts to drive demand for innovative solutions through public procurement.

The Innovation Union is built around three different dynamics. Firstly, the legislative reform dynamic, which entails putting in place a new European framework for research and innovation. An impressive effort has been made at EU level to frontload reforms to enable innovation. Based on wide stakeholder consultations, the Commission will have put forward all the six legislative proposals announced in the Innovation Union⁷⁴. The European Parliament and Member States are invited to deal resolutely with the present and forthcoming legislative proposals which aim at driving innovation.

Secondly, the mobilising actors dynamic at EU level, testing and implementing new instruments and concepts of innovation. These are complementary to legislative dynamics and focus on new forms of innovation (such as social innovation) or on new ways of working together (such as European Innovation Partnerships). These are ways of staying at the forefront of innovation and make it possible to monitor how innovation evolves. Again, 2011 saw many pilots and feasibility studies launched and further actions will continue in 2012.

Lastly, the success of Innovation Union will depend on the extent to which it can mobilise action at national and regional level. The review of the national reform programmes offers a good starting point for a strong innovation dynamic, but it would only bear fruit if measures are consistently implemented. EU Member States are invited to do more to prioritise research and innovation investments and turn into action political commitments undertaken in 2011, especially on pursuing reforms aimed at boosting the effectiveness of their research and innovation systems and improving the use of Structural Funds for research and innovation⁷⁵.

For 2012, the Commission will continue delivering the Innovation Union, notably by presenting the two remaining Innovation Union initiatives scheduled for 2012, i.e. the proposal for the European Research Area Framework and the new headline indicator⁷⁶. It will also present an external evaluation by the newly created European Research and Innovation Advisory Board.

In tandem with the innovation policy measures under way, the Commission will review the current approaches to innovation in other EU policies and propose strategies to mainstream innovation into all EU policies.

Annex: 2011 progress on Innovation Union commitments



Put in place national strategies to train enough researchers



Put in place EU-level financial instruments to attract private finance



Test feasibility of independent university ranking
Create business-academia «Knowledge Alliances»



Ensure cross border operation of venture capital funds



Propose an integrated framework for e-skills



Strengthen cross border matching of innovative firms with investors



Propose an ERA framework and supporting measures



Review State Aid Framework for R&D&I



Construct the priority European Research Infrastructures



Deliver the EU Patent



Simplify and focus future EU research and innovation programmes on Innovation Union



Screen the regulatory framework in key areas



Ensure stronger involvement of SME in future EU R&I programmes



Speed-up and modernise standard-setting



Strengthen the science base for policy making through JRC;
Set up a Forum on Forward Looking Activities



Set aside dedicated national procurement budgets for innovation



Set out EIT strategic agenda



Set up an EU level support mechanism and facilitate joint procurement



More information on each commitment available at: <http://i3s.ec.europa.eu/home.html>



Present an eco-innovation action plan



Set up a European Design Leadership Board



Establish a European Creative Industries Alliance



Promote open access; support smart research information services



Facilitate collaborative research and knowledge transfer



Develop a European knowledge market for patents and licensing



Safeguard against the use of IPRs for anti-competitive purposes



Improve the use of Structural Funds for research and innovation



Improve the use of Structural Funds for research and innovation



Launch a Social Innovation pilot; promote social innovation in European Social Fund



Support a research programme on public sector and social innovation Pilot a European Public Sector Innovation Scoreboard



Consult social partners on interaction between the knowledge economy and the labour market



Pilot and present proposals for European Innovation Partnerships



Put in place integrated policies to attract global talent



Propose common EU / MS priorities and approaches for scientific cooperation with third countries



Roll-out global research infrastructures



Self-assess national research and innovation systems and identify challenges and reforms;



Develop an innovation headline indicator



Monitor progress using Innovation Union Scoreboard

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The 2011 State of the Innovation Union is a comprehensive progress report on the Innovation Union, a flagship initiative under the Europe 2020 growth strategy for the decade. Launched by the European Commission in October 2010, Innovation Union aims to improve conditions and access to finance for research and innovation in Europe, to ensure that innovative ideas can be turned into products and services that create growth and jobs. Two key messages are identified in the report:

- Innovation is our best mean to help put the European economy back on track and tackle societal challenges such as climate change, health and ageing.*
- Achieving the Innovation Union objectives, our innovation imperative, has become even more important and urgent, and good progress has been achieved in 2011.*

Research and Innovation policy



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