



European Economic and Social Committee

INT/451
Research and
development: in support of
competitiveness

Brussels, 3 April 2009

DRAFT OPINION

of the
Section for the Single Market, Production and Consumption
on
Research and development: in support of competitiveness
(Exploratory opinion)

Rapporteur: **Ms Darmanin**

To the members of the Section for the Single Market, Production and Consumption

N.B.: This document will be discussed at the meeting on **24 April 2009 beginning at 9.30 a.m.** To allow time for translation, any **amendments** must be submitted in writing to the section secretariat (int@eesc.europa.eu) no later than **9.30 a.m.** on **22 April 2009.**

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Research and development: in
support of competitiveness

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On 27 June 2008, the Czech presidency requested the European Economic and Social Committee to draw up an exploratory opinion on

Research and development: in support of competitiveness.

The Section for the Single Market, Production and Consumption, which was responsible for preparing the Committee's work on the subject, adopted its opinion on The rapporteur was **Ms Darmanin**.

At its ... plenary session, held on ... (meeting of ...), the European Economic and Social Committee adopted the following opinion by ...votes to..., with... abstentions.

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1. **Conclusions and recommendations**

- 1.1 The EESC calls for a redefinition of Competitiveness and advocates that long term Competitiveness can no longer be calculated on the sole measure GDP but rather on a wider outlook that includes the sustainability factors of social, economic and environmental perspectives. The EESC believes that within the current economic climate we need to start focusing on Sustainable Competitiveness for the future.
- 1.2 The EESC identifies innovation as being a critical part of sustainable competitiveness based on the pretext that sustainability is a process and evolving measure, and hence innovation is what can hone such a process. Furthermore, Research and Development are an important aspect of the innovation process.
- 1.3 The EESC identifies in this opinion a number of inhibitors to the innovation and research approach. Overcoming such inhibitors requires a long-term vision and an investment for the future. The EESC hence recommends the following initiatives to be taken up so as to minimise the effect of such inhibitors:
 - The harmonisation of innovation opportunities and programmes within the European Union. Currently an array of opportunities for motivating innovation exist within the EU, however these opportunities are often disjointed and not visibly coordinated. Thus the EESC believes that there ought to be greater effort for a coordinated approach to innovation within the Commission and other bodies of innovation programmes managing such programmes.
 - Minimising the information overload and providing a more coherent and simple way of accessing innovation and research details and opportunities. The EESC does take note that there have been efforts to reduce the overload of disjointed information however

more needs to be done. Particularly for the benefit of SMEs information needs to be targeted, simple, effective and coordinated.

- Investing further in the education systems by reinforcing programmes such as Erasmus and Comminus, whereby students are required to have access to and avail of education outside their country of origin. The EESC believes that the fundamental stage whereby change can be permanently achieved is at primary and secondary education, therefore opportunities such as the above mentioned programmes are an important milestone in the formation students.
- Include entrepreneurship as an integral part of the educational curriculum. The entrepreneurial mindset is important both in the research field and also in industry, therefore this mindset can be brought about by ensuring that the education system thoroughly focuses on developing entrepreneurial minds.
- Improve the chances of economic survival for young entrepreneurs engaged in novel high-tech processes or products.
- Setting the conditions of employment of young researchers not only to a dignifying level but also one that will attract the best people to the profession. The EESC recognises that there may be differences between Member States in terms of conditions related to research professions but emphasises that there should be a concerted cross European effort to address this issue.
- Engaging all Member States as important players in the Innovation process thereby benefiting of the potential of the EU 27 and not only of the more experienced players in the field of RDI.
- Reinforcing structures in which there is constant cross experiences between academia and industry.

1.4 EESC acknowledges that research and innovation are not only a question for universities and special department in the companies, but for everybody. There are enormous resources in all people at the work places, and the concept employee driven innovation has to be developed further. The concept has to be taken under consideration in the cooperation at work places, the question of life long working and the work in work councils.

1.5 The EESC also affirms that countries and companies with a high degree of sustainable production, strong new technology and production building on a high degree of Eco-efficiency will be the most competitive in the future. The EESC recommend that EU takes Eco-efficiency in consideration as a mainstreaming factor in the policies of education, research and innovation, industrial policy, transport policy, energy and climate policy and social- and employment policy and support a stringent and stronger cooperation between the different political areas.

2. Competitiveness

2.1 In the EESC's view it is essential to relaunch EU competitiveness entailing specific choices and substantially increased resources, with the full involvement of all scientific and technical

expertise and structures across the Community. Only through efficient synergy between a newly relaunched innovation policy and the full range of Community policies, can the European Union catch up and lay the foundations for a new development model based on the growth of its own export capabilities vis-à-vis emerging countries that can rely on low labour costs.

- 2.2 The EESC believes that the focus of competitiveness within Europe should be broadened, and hence the GDP of the Member States. A shift to a more holistic perspective of competitiveness, with emphasis on sustainable competitiveness is therefore required. There are various measures for achieving such competitiveness, which can be used as tools. The Reference Document of Paradiso Project (done by members of the Club of Rome) in fact highlights a number of such measures. The EESC emphasises that a new measure, which takes existing tools into consideration, needs to be adopted. This new measure should address the concepts of sustainable social applications, sustainable economic scenarios and sustainability for our planet.
- 2.3 Given the recession in the industrialised world and the negative prospects for EU economy, the Committee intends to assist in identifying the responses that will be required to overcome this crisis. For this reason, the EESC welcomes the Czech Presidency's proposal to prepare an exploratory Opinion on Research and Development: in support of competitiveness.
- 2.4 The Committee is convinced that from a negative phase like the one we are living there may emerge as protagonists, and quickly recover, only those enterprises that will be able to be competitive in the markets of high quality traditional products and high technology. The only way to safeguard the future is a greater commitment to research and innovation. It is obvious that those who have invested in research in the past now have the appropriate structures and human resources, and therefore have better chances of overcoming the crisis earlier and more successfully than those who neglected this commitment.

3. Research, Development and Innovation

- 3.1 The EESC recognises that research and development are drivers of innovation. Industrial innovation needs to be addressed in this particularly sensitive period that Europe is going through. In order to respond to the economic downturn and the growing recession, the EESC believes it is essential to kick-start an innovative process to drive progress towards a "real factor for competitiveness", based on a number of fundamental pillars that can effectively relaunch the European industrial system, by making active use of the advantages provided by the enlarged internal market. These pillars are:
- research, innovation and entrepreneurship;
 - support for investment; and
 - a strong and renewed commitment to training.

- 3.2 It now seems clear that the admittedly huge efforts made by the EU in the field of research and innovation. Nevertheless further investment is needed when set against the needs imposed by the depth of the crisis. The EESC would like to see greater commercialising efforts for innovation results achieved through the research Programmes. Furthermore the EESC advocates further transparency in the fund allocation process and in the evaluation process.
- 3.3 Furthermore, the Economic Recovery Plan of the European Commission provides further stimulus for innovation. This is highlighted by the allocation of future funds to the "the Green Car Initiative"; "energy efficient initiative"; and the "Factories of the Future" initiative. All of which are intended to further stimulate research in these three areas, which have been affected by this economic crisis.
- 3.3.1 Europe has invested heavily in the structures that foster Research and Technological Development (RTD) and this is evidenced by the number of existing structures and programmes within the various central, national and regional systems.

4. The Knowledge Triangle

- 4.1 It is clear that for effective innovation and RTD in industry, the three components of the knowledge triangle need to be effectively engaged within the whole process.
- 4.2 According to the Committee, a fundamental objective will be to obtain a high level of cooperation between public and private research, university studies and the industry, which appears to be essential to creating a virtuous circle for European competitiveness.
- 4.3 A specific opinion on these themes entitled "The Cooperation and Transfer of Knowledge between Research Institutions, the Industry and SME: an Important Pre-requisite for Innovation" (INT/448) has been recently adopted. The purpose of this opinion is to carry out an in-depth examination of the present phase, with respect to the results obtained and the perspectives, by drawing attention to the obstacles to be overcome via a quick and efficient transfer of knowledge between two worlds, which have been too remote from and uncommunicative with each other for too long.
- 4.4 In this framework for cooperation between the scientific world and industry, the EESC has supported and welcomed the establishment of research Consortia with joint public and private funding, such as the scheme proposed in the recent Joint Technology Initiatives (JTI.), which the Committee has viewed positively, calling for its speedy implementation and widespread application¹. The Committee has defended the extension of these initiatives to other sectors, since they not only define the public/private partnerships and the equal allocation of resources

¹ OJ C 204/19 of 9.8.2008 (INT/386, Rapporteur: Dantin); OJ C 44/11 of 16.2.2008 (INT/363, Rapporteur: Dantin); OJ C 44/15 of 16.2.2008 (INT/364, Rapporteur: Dantin); OJ C 44/19 of 16.2.2008 (INT/369, Rapporteur: Dantin); OJ C 44/22 of 16.2.2008 (INT/370, Rapporteur: Dantin).

from the outset, but also offer university structures, public and private research centres and scientific representative bodies the possibility of becoming members of these enterprises.

- 4.5 At this point, the EESC would like to reiterate its urgent call, made in a previous opinion (INT/335), for an active coordination and consolidation tool for relations between the academic world and business, which has already been identified in the European Institute of Technology (EIT). The Committee considers the full functionality of this Institute, through the availability of the necessary financial and human resources, to be urgent.
- 4.6 The EESC considers the above mentioned role of communitarian coordination in the field of technology, through genuine cooperation and interface between universities and industry, to be vital. This is the decisive factor for developing the type of innovative products and processes which are essential to the competitiveness of the EU industrial system.

5. The inhibitor to effective uptake of research and development for innovation

- 5.1 In order to gain a more accurate picture of Europe's current position within the sphere of innovation, we need to analyse the current inhibitors to the stimulus of innovation.

- 5.2 The EESC identifies a number of such inhibitors; more traditionally these can be described as follows:

- education institutions being less prone to stimulating young people in taking up research careers;
- the dismal conditions of young researchers compared to their counterparts in other countries such as the US and also compared to other professions is a great deterrent to attracting good young researchers to the profession;
- research institutions being less in touch with the industry's economic requirements;
- industry not necessarily taking up innovation opportunities identified by research institutions.

- 5.3 At a deeper level, the EESC identifies some additional inhibitors:

- entrepreneurship is an inclination that is not stimulated and sufficiently trained within the European culture starting from European schools; hence support for young entrepreneurs and the economic preconditions and chances for young high-tech companies of surviving the first 5 years dwindling small and thus to not provide sufficient stimulus;
- the academic culture may not be conducive to the type of research that fosters competitiveness;
- the industrial culture may not be conducive to the exploration of change and proactivity;
- a lesser involvement within innovation programmes and research and development from some a number of EU member states, particularly the 12 which recently joined the EU.

6. An essential factor for innovation and competitiveness: vocational training

- 6.1 The availability of highly professional human resources with training options, which are at least equivalent to the highest international standards, is a pre-requisite for translating the programmes and priorities defined at Community level into a high level of competitiveness.
- 6.2 Human capital is indeed the most important resource for research and development. From its inception, the European Union has always acknowledged the need to include education and culture in the European integration process. Article 127 of the Treaty of Rome (Article 150 TEC) states that "the Community shall implement a vocational training policy which shall support and supplement the action of the Member States, while fully respecting the responsibility of the Member States for the content and organisation of vocational training".
- 6.3 There were many statements of intent but little practical action on vocational training until the 1980s. This trend was reversed with the birth of Eurydice, the official network for gathering, monitoring and disseminating information on education systems and policies in Europe. A legal basis was identified in 1985 for education policy, interpreting the concept of "vocational training" in broad terms to cover all forms of teaching in preparation for a profession, trade or occupation, including higher education.
- 6.4 This can be seen as the point when attention to training became a priority issue for Community policies and materialised in the first Community programmes (COMETT, ERASMUS, LINGUA for higher education and PETRA, EUROTECNET and FORCE for vocational training).
- 6.5 An illustration of their impact on the role of training at Community level is provided by ERASMUS which, despite some initial obstacles from certain Member States, has over a twenty-year period enabled nearly 1 500 000 young people and 250 000 teachers to spend a period studying or teaching in a university in a country other than their own, with a positive impact on carrying forward the entire European integration process.
- 6.6 Following a lengthy period of proposals, concerning all levels of training from primary school to university under the Lisbon Strategy, in March 2000 the European Council set the European Union the strategic goal of becoming the "most competitive and dynamic knowledge-based economy in the world", followed in 2002 by the Barcelona European Council which restated this important role and setting itself the objective of making European educative and training systems "a world quality reference by 2010".

7. From an SME perspective:

- 7.1 Further inhibitors exist at the SME level, and the EESC believes the main one to be the fact that SMEs do not have enough resources to invest in research and exploit innovative ideas

and opportunities for research. There are different types of opportunities but the abundance of information and opportunities is in itself an additional inhibitor because it is alienating.

- 7.2 The EESC nevertheless reiterates the importance of creating a favourable context for direct SME participation in EU research and innovation initiatives, as foreseen in the important actions of the "Capacities" programme of the VII Framework Programme, given how numerically widespread they are, and their importance in terms of new job creation.
- 7.3 SME participation is often made difficult by the lack of procedures appropriate to their size, a factor that, alongside the risk capital required during the start-up phase, constitutes the key reason for their difficulties in participating. Indeed, whereas large businesses have appropriately structured offices and the necessary information to submit requests for programme funding, small businesses often decide against submitting requests when faced with the excessive bureaucracy involved in submitting requests, preparing contracts and subsequent administrative management.
- 7.4 All these factors make it difficult to attain a strategic goal set out in all EESC opinions on the participatory role of SMEs, whereas the latter have massive innovative potential. The EESC once again calls for the simplification of the rules required for SME participation. They have considerable creative potential and constitute a fundamental presence, given their proximity to the expectations and demand for new products emerging from civil society.

8. **Further observations**

- 8.1 In fully accepting that an important commitment to research and innovation is a component of all modern economies, we cannot forget that the very process has to be based on strictly environment-friendly production, rigorous protection of our values system and a solid defence of the European social model.
- 8.2 In order to turn a new policy founded on research and innovation into reality and allow the European system to regain its competitiveness vis-à-vis other advanced economies and emerging countries, we have to make a strategic commitment and substantially increase resources, both human and economic in order to enable Europe to reach a high level of global scientific excellence.
- 8.3 The EESC also underlines that the prerequisite for innovation and competitiveness is appropriate vocational training and education delivered by training institutions from primary school to university, in order to win young people over to scientific careers, which would ensure human resources with a high level of professionalism and motivation, based on training opportunities of the highest international standards.
- 8.4 European Commissioner for Economic Affairs, Joaquín Almunia, has provided the 27 Member States with data on the "intermediate economic forecast" which has caused great

concern. That forecast confirms that Europe faces a deep recession, with an average contraction of GDP of 1.8%. In the case of Euro area countries, the forecast is equally worrying for those countries which have always driven the European economy, such as Germany (-2.3%). Ireland has been seriously affected by the financial crisis (-5%), as have Spain and Italy (-2%) and France (-1.8%). According to this forecast, the fall in European GDP will have a disastrous effect on employment, bringing the unemployment rate to 8.2%, with 3.5 million job losses and a public deficit that in 12 out of 27 Member States will be higher than the 3% established by the Maastricht Treaty, with higher rates in Ireland (11%), Spain (6.2%) and France (5.4%).

- 8.5 This data refers to January 2009 but already seems far removed from present reality. The Commissioner has already spoken on this issue on several occasions, sounding the alarm on the gradual and steady deterioration in the economy and forecasts that 6 million jobs would be lost by 2010. In a speech to the EESC, Commissioner Almunia stated that judging by the most recent data, the January economic forecast would have to be reviewed downwards.
- 8.6 In order to measure the still existing gap and the distance from the target required for economic recover at the Community level, we have only to compare the investments made in Europe and the United States. The USA has consistently invested 3 % of its GDP in research, whilst the European Union invests under 2%, with some Member States still far below the 3% target established by the Lisbon Strategy. And today in this new period of recession, even this target seems completely insufficient in quantitative terms.
- 8.7 This negative scenario clearly reveals just how much Europe is lagging behind and the extent of the effort needed to regain an adequately high level of competitiveness in an international industrial scenario that is changing rapidly, mostly due to the emerging economies.
- 8.8 Europe should, therefore know how to take advantage of the positive gains from investment in knowledge (research and development, education, vocational training) in terms of competitiveness and also from the growth of the industrialised economies, and move decisively in that direction.
- 8.9 Reports show that companies get more out of their research if they cooperate with the employees, develop their competences and organize the work places in a way that ideas from the employees can develop and be transformed to actual policy of the company.

8.10 The employee driven innovation has put companies in a better position and spared the companies for lots of money and increased their competitiveness. The concept must be supported, and can be useful when we talk about not working harder but smarter.

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N.B.: Appendix overleaf

Appendix

1. As regards research and innovation, the EESC's proposals and contribution have been set forth in a considerable number of opinions, which should be consulted for further details. We will summarise here only the main principles which have underpinned the EESC's initiatives in these areas, which are the driving force for economic development.
2. The EESC has consistently attached great importance to the need for connections to be made between the various branches of research, with a view to achieving overall scientific excellence whereby basic research is closely connected to applied (or pre-competitive) research, right through to the following phase of product and process development.
3. To this end, a coordinated, joint contribution is needed from public research, along with research in industry, universities and research institutes - both private and state funded.
4. Joint participation by these areas of research, and coordination of research centres operating in the various Member States with those newly set up at Community level, must become the mainstay of European research and innovation, but for this process to take place, there must be an active exchange of human and other resources and programmes in these areas, which have for too long remained disconnected and inward-looking.
5. In its supportive role of making proposals, the EESC has consistently taken great care to ensure maximum participation by all available stakeholders in the programmes provided for, while taking into account the need for a critical mass in the various phases.
6. Indeed, not only has it made proposals supporting participation by major industrial businesses but it has also upheld the need to encourage active participation by SMEs, which are the mainstay of our economy, in the same way as in the scientific world it has stressed the need for direct contributions from smaller research centres as well as large universities, where the former can bring further added value.
7. On the specific issue of eco-compatibility, the EESC (INT/349 - Ms Darmanin) has strongly argued that mainstreaming environmental policy into all other Community policies, adopting eco-friendly production methods and systems and making the European public aware of the development of a "green market" of appropriate goods and services, are not additional costs but rather enable the potential challenges to be turned into competitive opportunities for European industry.
8. The EESC remarks that European Council in March agreed to invest billions of euro in new projects to support the sustainable development. The member states will at the same time invest enormous sums in recovery plans that will also support a more sustainable development. The EESC finds it important that the climate policy is connected to the new investments and new ways

of product thinking are supported and highlights that the working plan for 2009-2011 under the Eco-design Directive must have high priority.

9. To support the climate policy and a sustainable development it is not only important, but necessary that new technologies are developed and new ways of thinking are supported. Competitiveness must not only be a question of maximizing profits, but seen in connection with a broader view. New thoughts of industrial ecology and eco-design have to be introduced. Cooperation between different universities and industries and national and European political institutions have to be developed further.
10. Another key aspect which the EESC has consistently emphasised is a strong focus on human capital, which is the most valuable resource in research and innovation, starting with the essential contribution made by creative young people.
11. It has lent its support and made tangible proposals of all kinds to foster in young people a taste for research and a career in science, which must be nurtured throughout its development, encouraging the new generation to undertake the difficult but compelling path of studies in this field and creating a "virtuous science circle" by subsequently providing the best-quality academic teachers to train new and increasingly well-prepared generations of scientists.
12. The availability of highly-professional, highly-motivated human capital is the most valuable resource for knowledge and innovation, and it is the key to supplementing the European science area with a European knowledge area. In its most recent opinions (INT 325 – 326), the EESC called for close attention to the issue of vocational training, starting in schools, where more importance needs to be attached to scientific and technical subjects given the current wide gaps in training available in this area, and it firmly reiterated the need to provide young people with lifelong training which constantly brings their skills into line with the highest international standard.
