



Coimbra Group Position Paper on the European Commission's Green Paper, "From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation Funding"

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We can't solve problems by using the same kind of thinking we used when we created them.

Albert Einstein

The Coimbra Group has studied the European Commission's Green Paper with interest and we welcome the effort to strengthen the strategic framework for EU research and innovation. At the same time we do have reservations with regard to some of the underlying assumptions of the paper. The Coimbra Group has the following general comments:

Basic Research

In general, the Coimbra Group finds that the Green Paper is carried by a basic assumption that it is possible to rationally identify and plan research and innovation on selected issues. We find that this assumption, although sound enough within certain strict limits, underestimates the challenge that the European Research Area is facing with regard to building a long term research and innovation capacity for future challenges and opportunities. Many great breakthroughs have originated in basic research planned and conducted for other reasons than the subsequent innovative consequences and results. Moreover, medium term strategic priorities or uncertain long term priorities should not compromise the retention and development of a broad research and innovation capacity.

A crucial element in a future common strategic framework should be to develop and maintain an equitable balance between basic research determined by the universities and a strategic focus on the grand societal challenges.

It should be emphasised that discovery and innovation are rooted in basic research and in the systematic furtherance of the human knowledge base. A narrow approach to innovation through strategic research planning might, albeit counter-intentionally, narrow the potential scope for creativity and invention.

Furthermore, there should be an emphasis on interdisciplinary approaches to the grand societal challenges. Often, answers to the grand challenges are not to be found in individual disciplines, but in an original combination of different fields of knowledge. At the same time, the individual research areas must rely on continued in-depth basic research to contribute creatively to the problem solving challenges, something which will need to have an impact on the funding mechanisms chosen for the future common strategic framework.

Innovation?

In general the Green Paper suffers from a lack of precision with regard to the many possible meanings and manifestations of "innovation". From this follows a lack of precision with regard to the possible instruments to further the innovative capacity of the European Research Area.

The Green Paper operates mostly with an implicit understanding of innovation as the process of converting technological (in the context mainly restricted to “technical”) inventions or discoveries into commercial exploitation. This does not correspond to the much more complex processes needed to foster the necessary knowledge breakthroughs to solve the grand societal challenges.

Innovation can be fostered through establishing a broad research framework for basic and interdisciplinary research conducive to new original approaches to knowledge. It can also be promoted through a new combination or exploitation of existing knowledge, through new advanced educational programmes or through a traditional focus on bringing new technical designs from the research institutions to the market.

The Green Paper seems to transmit the idea that moving from research to innovation is an easy task or a linear process. It is not straightforward to introduce something new. Creativity and invention depend on research, but innovation needs other ingredients, needs organisational contexts, needs changing old organisational forms and practices, is accomplished consistently and systematically through appropriate methodologies. Innovation requires genuine social change, commitment and openness to new best practices. Development depends on an “innovation ecosystem”. Innovation is not only linked to science and technology, but also to social organisation and culture.

‘Successful research, whether in the sciences, humanities or social sciences, depends upon a culture and attitudes that value curiosity, scepticism, serendipity, creativity and genius’ (LERU Paper, *What are universities for?* 2008, p. 10). This innovation culture which for centuries has been nurtured and sustained mainly by universities has been the source of much unplanned, unexpected or even accidental innovation while attempts to predict and steer innovation have almost all failed. There is a very real danger that a narrow, utilitarian and short-term understanding of the aims and objectives of the Innovation Union might not only fail to deliver on its ambitious targets, but might actually harm Europe’s innovation potential. The Coimbra Group therefore cautions against a limited and constricted streamlining of funding mechanisms according to narrowly defined goals and targets.

The need to shorten the distance between research and innovation should not determine the content of research. Programmes to further innovative output from research and a process of innovation should be focused on development, entrepreneurship, and collaboration and a mix between, on the one hand, broad flexible programmes to support the contacts between research institutions and industry (in the broadest sense) as well as public institutions and, on the other hand, focused programmes to support knowledge dissemination and transfer in certain select technology (again in the broadest sense of the term) fields. And as emphasised above, innovation should be understood in the widest possible sense of the word and embrace all walks of academic research life between nanotechnology and philosophy.

Social Innovation and the Capacity for Change

In this vein, the Coimbra Group welcomed the emphasis in the earlier Innovation Union paper (October 2010) on a broad concept of innovation and encourages the Commission to develop this concept further. “The creativity and diversity of our people and the strength of European creative industries offer huge potential for new growth and jobs through innovation.” (in: Innovation Union paper, p. 7). This is echoed to some extent in the Green Paper’s commitment to “supporting broader innovations (including non-technological and social innovation)” (in: the Green Paper, p. 6), but does not characterise the Paper as a whole. The broad definition of innovation and of the relevant elements of the innovation chain is needed if a comprehensive approach to innovation is to capture the manifold contributions universities make to innovation.

Arguably the biggest contribution universities have to make to innovation is through the education at all levels of their students as future researchers, innovators and leaders in society. In this context the creativity and ability for lateral and innovative thinking ‘outside the box’ of graduates is worth mentioning.

In the light of the centrality of creative and innovative ‘human capital’ for innovation the Coimbra Group strongly endorses the commitment of the Innovation Union and the Green Paper to create environments and instruments that will attract the very best and brightest of a generation into research careers and to provide them with clear career paths and advancement opportunities.

However, the potential of innovation for job creation should not be defined too narrowly. It needs to be born in mind that the creative and cultural industries around Europe have continuously outperformed all other sectors in terms of growth rates and the level of qualification of those employed in the sector. The contribution to GDPs of the creative and cultural industries across Europe today is higher than that of the car industry.

Social innovation, creativity and ingenuity are key aspects of innovation in all fields and are crucial if European societies are to tackle challenges like climate change, ageing, multi-ethnic societies and cultural diversity. Investigation into what drives human behaviour on the level of the individual and of societies and research into the complex links between history, tradition, mentality, identity, motivation and agency will be central for the success of the 2020 Innovation Agenda.

Research Training

The importance of research based university education should be emphasised as an important element in providing a creative, top-notch competent labour force for the public and private labour markets in Europe and entrepreneurs to create new businesses and jobs. Innovation is not only promoted by those who do research, but also by highly educated employees with an up-to-date education originating in a quality research environment who are able to understand the nature of the innovative elements.

Skilled research trained people have a paramount role in innovation, because of their ability to create new knowledge, to learn new competences, to transform and to adapt existing ideas to new contexts. Therefore the foreseen integrated approach should embrace funding to increase the number of young people involved in doctoral programmes. As doctoral training is the basis for the development of original research, it is necessary to rethink the way in which Europe structures and funds doctoral level research training.

A parallel challenge is the challenge to strengthen the mobility of researchers in Europe. Much can be done to promote a more committed institutional effort in furthering the mobility especially of doctoral candidates and postdocs. The importance of bringing doctoral candidates and postdocs together goes beyond the need to create critical mass as it will also ensure that a variety of cultural input, ideas and knowledge will engender the ingredients needed to nurture innovation. 'Critical mass' is used here in its broadest possible sense of bringing together sufficient excellence and talent and not, as is usually the case, limited to one discipline or the other. It is one of the prime advantages and contributions of Europe's universities that they provide a creative environment to all disciplines and thereby further cross- and interdisciplinary interaction and, eventually, changes also in the definition and structure of disciplines. The Coimbra Group is well aware that multi-disciplinarity does not necessarily produce inter-disciplinarity, but encouragement, interaction and mobility are all factors which promote and further inter-disciplinarity and entrepreneurship.

Crucial to this development is the financial support to turn knowledge into innovation and to the commercialisation of research results. It is well known that young research trained and skilled people in Europe face more difficulties than researchers in the USA in finding investors to concretise their innovative proposals. The design and use of financial instruments involving risk capital have to be a matter of concern in the future Common Strategic Framework.

Funding

Research funding programmes should combine both the possibility to apply for small scale projects and for large scale research programmes in order to accommodate the diverse nature of the many research disciplines and (interdisciplinary) areas. This would also facilitate the support for emerging research fields and methodologies and for collaboration with small and medium-sized enterprises, often the most creative and inventive businesses, but also vulnerable to financial fluctuations.

It should be clear that the decisions to be taken regarding research and innovation funding have to take into account that universities and research centres do not mature their work in short-term cycles. The breadth of research is a matter of long term commitments, the daily research work that requires patience, persistence, and the perspective of long term and substantial investment.

A shorter distance between research and innovation can probably be achieved through the use of appropriate funding instruments, but these are currently not available. The criteria for the design of new funding instruments have to be clarified (indicators of best practice, more flexible and simplified administrative and accounting procedures, definition of the level of excellence of partners in future projects or doctoral programmes, etc.). Vague concepts such as “smart specialisation strategies”, “reinforced strategic programming, increased concentration of resources” (in: Green Paper, p. 7) do not allow for sufficient precision in the design of possible future funding instruments.

Funding for collaborative schemes with external partners (industry, SMEs, NGOs, charities, cultural institutions, etc.) can enhance future knowledge transfer, and joint programmes at national or European level could take advantage of the existing critical mass at both levels and thereby avoid fragmentation.

It is therefore the recommendation of the Coimbra Group that the future Common Strategic Framework should embrace a broad and flexible spectrum of funding programmes to support the innovative potential of research and higher education, among these a considerable increase in support to basic research in all fields, and to doctoral candidates and postdocs as the prime source of knowledge transfer and creativity.

Conclusions

Looking back to the debates leading up to the Financial Perspectives 2007-2013 and, in particular, the forward-looking “An Agenda for a Growing Europe”, the so-called Sapir Report in 2003, the foundation of the present Green Paper comes across as rather less visionary than the 2003 report with its far-reaching perspectives on expansion and sustainability, cohesion and globalisation.

Compared to this earlier outlook it has been a considerable disappointment to the Coimbra Group Universities to see the role of Europe’s research universities reduced to mere providers of short-term needs when the real challenge in unleashing the knowledge and innovation potentials in the EU is the challenge to promote closer co-operation between the many excellent research institutions and universities in Europe. It would have been welcome if the focus could have been on what can be done to promote research collaboration between European universities on research issues or fields selected by the (groups of) universities themselves. It goes without saying that such consortia should include excellent partners from industry and from third countries.

As shown above, it has been a source of considerable concern to the Coimbra Group that the complexity of innovation is underestimated and along with this the vital role and creativity of university research and their diversity of research disciplines. This has given rise to the concern that a future Common Strategic Framework might neglect the fundamental role in any innovation strategy of basic research, of the cross-feeding of ideas and knowledge through increased mobility of researchers, of the need to foster spaces for researchers to meet, exchange ideas and promote entrepreneurship.

It is the hope of the Coimbra Group that the considerations presented in this position paper will contribute to a future Framework which will enable genuine innovation to be generated.

Coimbra Group
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