CESAER

conference of european schools
for advanced engineering education
and research

Statement on the implementation of the European Innovation Council (EIC)

Leuven, 21st October 2016

Complementing the Joint Statement on the EIC dated 27th April 2016, this statement provides concrete input from fifty-one leading doctoral-granting universities of science and technology from twenty-six countries on the implementation of the EIC. Our key messages are:

- Filling an evident gap in the current Technology Readiness Level (TRL) driven European innovation funding instruments landscape, the EIC should strengthen the role of universities feeding into disruptive innovation by supporting highly interactive innovation eco-systems and by supporting bottom-up science-driven inventors, entrepreneurs and their ideas.
- The EIC should focus on three types of funding opportunities, i.e. 1) an open Proof-of-Concept (PoC) scheme, 2) a true bottom-up instrument targeting innovators and their ideas and 3) support local and thematic innovation eco-system players. A flexible approach to types of applicants is needed and portability of grants should be allowed.
- It is of paramount importance that the EU also reviews incentives for risk capital provision to science and technology-driven start-ups and small and medium enterprises.
- The EIC should evaluate and assess proposals with regard to opportunities to create a new market, the level of business excellence in the team, the distance to market and the level of developmental risk in the project.
- Direct interaction between the evaluators and the proposer before the completion of the evaluation report is essential, allowing for the clarification of questions and the verification of information.
- A life-cycle and support to move towards implementation approach will enable the EIC to develop a portfolio of market-creating innovation projects at various stages.
- The EIC should periodically monitor the progress of all projects in its portfolio and review how they have followed up on prior recommendations. Rather than a `tick-box` exercise, such monitoring should investigate whether the projects are agile enough to respond to developmental and market conditions.
- The European Commission should educate and train regional and thematic interlocutors - such as National Contact Points, the Enterprise Europe Network (EEN) and interlocutors linked to thematic networks - enabling them to effectively and efficiently inform potential beneficiaries about the opportunities at the EIC and to collaborate with institutional interlocutors.
- The websites - such as the Participant Portal – used to communicate with innovators should present information from the perspective of the seeker (demand driven).

Complementing the joint Statement on the EIC dated 27th April 2016, fifty-one leading doctoral-granting universities of science and technology from twenty-six countries united within the Conference of European Schools for Advanced Engineering Education and Research (CESAER) with this follow up statement provide input for the implementation of the EIC along four topics, i.e. 1) awareness and accessibility, 2) funding opportunities, 3) assessment and evaluation of grant requests and 4) follow-up, mentoring and monitoring.

We recall the important role of curiosity-driven as well as use-inspired fundamental research performed by universities of science and technology, leading to many unexpected breakthrough technological and social innovations. Such disruptive innovation projects can only arise and be successful if there is an openness towards ideas and new knowledge and support for such innovation projects in the earliest stages. Therefore excellent research activities lay the foundation for 'market-creating' innovation and investment in such research is essential.

We thus fully support an EIC focus on funding of bottom-up science-driven and 'market-creating' innovation as opposed to policy. We also believe that it should be funded by rebalancing current funding from incremental to disruptive innovation under the existing budget from Horizon 2020. Moreover we advise that better and more simple instruments are e designed along the good practice of the European Research Council (ERC) and that the EIC should better follow up enabling sharing of knowledge and learning from successes and failures of projects.

Awareness and accessibility

The current European innovation funding landscape is very complex and for innovators it is therefore difficult to identify the right support opportunity. As such the success of the future EIC will depend on transparency of the innovation system. The EIC can raise the awareness and improve accessibility along the following lines:

- Support in identifying funding opportunities for innovators is most effective at institutional and regional levels. The European Commission therefore should educate and train regional and thematic interlocutors – such as National Contact Points, the Enterprise Europe Network (EEN) and interlocutors linked to thematic networks - enabling them to effectively and efficiently inform potential beneficiaries about the opportunities at the EIC and to collaborate with institutional interlocutors. Particularly within local innovation eco-system players such as business and science parks, regional development agencies, start-up support structures, incubators etc. Yet another central help desk for innovators in Brussels is not the solution.
- The EIC should develop a clear and distinct brand and communicate in a direct and easily understandable way, avoiding bureaucratic slang. This is not only important when identifying funding opportunities for innovators, but also later in the engagement: A grant agreement of over one hundred pages will typically scare (inexperienced) grant seekers away.
- The websites - such as the Participant Portal – used to communicate with innovators should present information from the perspective of the seeker (demand driven).

Funding opportunities

The current EU Framework Programme for Research & innovation (Horizon 2020) puts too much focus on incremental innovation and projects with high Technology Readiness Levels (TRL). We draw attention to an increasing gap (TRL 4-6) between fundamental research as covered in priority one (TLR 1-3) and higher levels (7 upwards). An overly dominant focus on incremental-innovation and closer to the market activities prevents us universities of science and technology from contributing optimally. This gap is especially problematic in Priority 3: Societal Challenges where there is no proper connection between technologies (which are supposed to bring solutions to the market) and ground-breaking research (which is a pre-requisite for the anticipated solutions). The trend towards higher TRL is somewhat exacerbated by the increasing importance of public-private partnerships, which are primarily industry-led and through which some calls for proposals are channelled.

In our view, the EIC should fill in this gap and focus on three types of funding opportunities:

1. An open Proof-of-Concept (PoC) scheme (mono-beneficiary) aimed at bridging fundamental research and demonstrations of PoC should stimulate the up-take by business, industry and public services and make the idea attractive to potential investors. The call should continuously be open (`responsive mode`) and completely bottom-up.
2. The current SME Instrument should effectively be adjusted towards a true bottom-up instrument to prevent the death of successful, unconventional projects that fall outside the remit of existing top-down instruments. It should fund high-risk and high-gain science-driven business ideas for product and services innovation from publicly funded knowledge institutions, operating over the borders of scientific fields and economic sectors and at the intersection between tech and non-tech innovation. Therefore the main focus of this scheme is to stimulate market-creating innovations to become successful. The type and amount of support should depend on the specific need and the stage in the life-cycle of the product, service or company: from moderate-sized to larger grants in the early stages towards co-funding leveraging more private investments into such high-risk innovation projects in the later stages. Also this scheme should be fully bottom up with a continuously open call.
3. Support should be provided to innovation eco-system players helping innovations to develop and scale up on the global market (multi-beneficiary). In particular, incubators and accelerators at different levels constitute an indispensable ingredient in supporting emerging entrepreneurship. In addition, SME networks and various triple helix organisations play important roles. Grants supporting such players could strengthen the capability to coach start-ups and entrepreneurs, again increasing the number of scientific ideas and business concepts that actually reach the commercial stage. Structures targeting successful beneficiaries of the PoC scheme and tailored to the beneficiary in question to develop scalability options for their concept and market testing routes are of particular interest. Mentors are essential for the success of early concepts and inventions. Recalling that universities of science and education are providing transversal skills such as entrepreneurship, we advise to investigate better interconnections and make them more visible with other relevant EU funding instruments such as the Erasmus for Young

Entrepreneurs, the Action 2 and 3 of Erasmus+ and the European Institute for Innovation and Technology (EIT).

The cost for advancing TRL can be very high and `market failure` can occur in some stages. The investments needed to increase TRL depend on the social and technological application and the fields, but today there are often no incentives and structures for start-ups and venture capitalists to create value for the economy and the society.

We advise the adoption of a flexible approach to the various types of applicants enabling us institutions to reward open innovation behaviour of our staff and portability of such (mono-beneficiary) grants should be allowed.

In parallel to the EIC actions, it is of paramount importance that the EU also reviews the incentives for risk capital provision to science and technology-driven start-ups and SME´s. We believe that both the general incentive schemes for private investors need to be improved and that the EU must improve its own instruments for risk capital provision, in volume and quality. In particular, it is important to build in sufficient endurance to be able to support truly disruptive innovations from idea to global success, a process which may take a decade. Without competitive access to risk capital, there will be smaller chances to retain successful businesses in Europe and the EIC will produce business concepts for global rather than European investors.

Assessment and evaluation

The TRLs are of variable use, because a particular innovation product may depend on various technologies all at different TRLs, because the speed with which a technology can be moved from one TRL to the next depends on many factors (including regulation and market convention), because the level of risk in moving from one TRL to the next is not captured in the TRL concept, and because consumer attitudes are not well captured (e.g. the early adopter phenomenon is strong in certain areas and weak in others). However, the broader concepts of `distance to consumer` (instead of market, as the market doesn't necessarily exist yet) and `development risks` are still present. In the case of disruptive innovation there is a failure of the market mechanism, i.e. the private sector is not doing this (sufficiently) on its own, and therefore a public sector intervention is required.

The EIC should evaluate and assess proposals with regard to opportunities to create a new market, the level of business excellence in the team, the distance to market and the level of developmental risk in the project. Importantly, such evaluation and assessment should be directed towards supporting the projects to move towards implementation. This involves the evaluation of the excellence in market-creation innovation case of the idea on the one side and the assessment of the implementation on the other. Therefore, mixed evaluation teams specifically set up for a proposal are needed feeding their evaluation and assessment results into standing panels which take the final funding decisions at set times. Such teams should not only evaluate and assess to what degree minimal key requirements with regard to the market-creation innovation case and the implementation are met, but also provide for concrete recommendations supporting the project to move towards implementation.

Therefore, direct interaction between the evaluators and the proposer before the completion of the evaluation report is essential allowing for the clarification of questions and the verification of information. Considerations of supply and demand of existing markets should not be taken into account, but the evaluation and assessment should involve investors and evaluators with business track record, particularly if a project is in mature stages of implementation. We believe that faster transition to a real commercial judgement is the best option and that public money might be used as seed investment in that context.

The orientation at the life-cycle of innovations as well as the focus on support to move the projects towards implementation may seem revolutionary compared to the current evaluation and assessment practices in European research and funding instruments, but is crucial for the success of the EIC. However, the European Research Council (ERC) has successfully demonstrated to be able to identify the `ground-breaking` and excellent nature of project proposals and the European Strategy Forum for Research Infrastructures (ESFRI) has successfully developed a life-cycle and support evaluation and assessment methodology. Learning from these best practices, the EIC evaluation and assessment would allow for a 'seal of excellence' for projects proposed to the EIC and evaluated above the quality-line, but below the funding line of EIC, to be funded under alternative funding sources, including private and national funds and the European Structural and Investment Funds (ESIF).

Follow-up, mentoring and monitoring

The life-cycle and support approach will enable the EIC to develop a portfolio of market-creating innovation projects at various stages of their life-cycle. The EIC should periodically monitor the progress of all projects in its portfolio and see how they have followed up on prior recommendations. Rather than a `tick-box` exercise, such monitoring should investigate whether the projects are agile enough to respond to developmental and market conditions. It goes without saying that such monitoring also should allow for decisions to stop funding if a project fails to proof success.

Essentially, such periodic monitoring allows for targeted support and mentoring for projects. Well-qualified mentors are available within the networks of the local innovation eco-systems. Their knowledge – possibly combined with knowledge of successful innovators elsewhere – is vital to the success of the disruptive approach.

Such a life-cycle and portfolio approach asks for a dedicated, effective and efficient information system reducing the administrative burden for the projects essentially tracking the history, progress and follow up on all projects in the portfolio. For projects in the later stages of the life-cycle, dedicated cooperation with existing initiatives - such as the European Institute of Innovation and Technology, Eureka and European Investment Bank - for sharing data & intelligence and aligning guidance is desirable.

Our commitment to cooperate and contribute

We, universities of science and technology, translate scientific research and technological and social development into innovative solutions for the benefit of society and educate and train future generations. University engineering education transforms the world in which we live and contributes to solving the challenges of tomorrow. Based on our intense collaboration with business, industry and public services and the strong culture of entrepreneurship within our institutions, our activities encompass higher education, research and innovation and we strongly bridge between academia, state, market and civil society. We bring open education, open science and open innovation into practice on a daily basis and we are open to the world.

In the light of this role and as key stakeholders in Europe, we are prepared and committed to work together with the EC, member states, associated countries and the European Parliament as well as with other institutions and stakeholders in implementing the EIC and making it a success. We hereby offer our expertise and constructive input and sharing of best practice.

For more information and enquiries, please contact our Secretary General David Bohmert at david.bohmert@cesaer.org.

The Conference of European Schools for Advanced Engineering Education and Research (CESAER) is a non-profit international association of fifty one leading doctoral-granting universities of science and technology from twenty six countries. We stand for scientific excellence in university engineering education and research, and the promotion of innovation through close cooperation with business, industry and public services in order to ensure the application of cutting-edge knowledge in society. CESAER maintains and promotes the highest quality standards. CESAER's mission is to:

- serve as a close network and platform for mutual learning;
- contribute proactively to European developments by conducting a permanent dialogue with and influencing European institutions and other stakeholders;
- inspire reflections and policy decisions of stakeholders at European and national level;
- foster public understanding of the role of engineering in societal and economic development considering the principles of sustainable development.