ERT

20 November 2017

ERT views on the future of research and innovation

Executive Summary

General comments

- **ERT commends the European Commission's efforts** in bringing research and innovation (R&I) at the forefront of EU policy making.
- **ERT also welcomes the report presented by Pascal Lamy and the independent High-Level Group**[1].This report draws up a vision and a set of strategic recommendations (see Annex) to maximise the impact of R&I.
- **There is increasing momentum** for the European Commission, Member States and the Parliaments, together with key stakeholders, to keep R&I on the political agenda, to stimulate the debate on innovation and to further improve overall framework conditions.
- **The "Lamy report" recognizes that R&I is the basis for progress, employment and high living standards**. Nonetheless, it also notes that EU Member States have failed to reach the 3% annual GDP dedicated to R&I and as a result the European Union overall is losing ground compared to other competitive regions and nations.
- The fundamental role played by industry in innovation is highlighted in the report. But **ERT would like to emphasize that innovation is also a critical factor for large European companies to stay competitive globally**. Europe is highly successful in creating knowledge; however, this needs to be transformed more consistently into innovation. ERT notes that European companies are facing more difficulties in turning knowledge into real business than their foreign competitors and in recruiting talents.
- **In Europe, we need to reconnect R&I with people's live. Citizens often mistrust innovation and consider it disruptive. There needs to be a reestablishment of this trust.** We need to show that innovation benefits EU citizens and the environment, especially to meet challenges such as energy transition, mobility, aging population and chronic diseases.
- **An important part of the EU Multiannual Financial Framework (MFF) is allocated to industry competitiveness.** The current debate on the future of the MFF offers an opportunity for industry to contribute and to shape it.
- The report stresses that **EU State-Aid rules should be more innovation-friendly** and the importance of a better global level-playing field. ERT urges an open debate on this.

[1]LAB – FAB – APP Investing in the European future we want (July 2017). LINK : http://ec.europa.eu/research/evaluations/pdf/archive/other_reports_studies_and_documents/hlg_2017_report.pdf

- In addition, ERT welcomes the European Commission's commitment in its new industrial strategy to **implement the Innovation Principle**, "in all policy domains".

Specific ERT comments and recommendations

- **ERT urges the EU Commission to ensure participation of industry in the next Framework Programme ("FP9").** Such participation has remained limited so far. Furthermore, as underlined in the "Lamy report", additional resources should be invested in R&I to meet the many societal challenges that we face.
- Parallel to the European Research Council (ERC), a **European Innovation Council** (EIC) could be established to **provide top-level strategic advice for improving framework conditions,** enable innovation reaching the market and help society while not creating an additional governance layer.
- **The effectiveness of innovation funding should be improved** – as indicated in the "Lamy report", by reorienting spending towards future-oriented objectives, cross-institutional cooperation and mission-driven approaches, aiming at greater and long-term impact. The report suggests that the UN Sustainable Development Goals could serve as reference for designing a "mission-oriented" approach. Such approach could identify contribution from large-scale industry and SMEs.
- More **specific targets** of certain EU programme resources and budgets toward more **radical market-creating innovation** could be determined.
- The report stresses the importance **to create added value for the EU** and not to replicate national programmes. There is also a need to streamline funding mechanisms.
- The "Lamy report" emphasizes that for greatest impact, **academia and private sector research should be mutually supportive, based on cooperation and trust.**
- **Open access to research data and other results should only apply on a voluntary basis.** Industry is in favour of optimal re-use of data, provided that granting access remains voluntary and flexible, and applicable security rules and legitimate scientific and commercial interests are respected.
- **ERT notes that although the "Lamy report" rightly stresses that addressing Europe's innovation deficit requires more than public money, it fails to address the regulatory environment**. It needs to be made less "risk averse" and more innovation friendly by mainstreaming innovation across all EU policy domains (the Innovation Principle) and by designing demand-side innovation. We also need proportionate, pragmatic and evidence-based policy making.
- The report rightly calls for **strengthening education and entrepreneurship in support for innovation**. ERT suggests **this is also a way to mobilise and involve citizens**.
- The report correctly emphasizes that **boosting the impact of R&I policy is a collective responsibility**. We need to **involve citizens in the debate** on the role of science and innovation and encourage all partners to **communicate more effectively** the benefits science and innovation can bring to address societal and environmental challenges.
- We should use existing good practices in **Public-Private Partnerships** (PPP) **or or Joint Technology Initiatives** (JTI) to measure or evaluate impact ("Hard"/"Soft" KPIs).

Introduction

ERT welcomes the European Commission's continuous efforts to bring research and innovation at the forefront of EU policy making. ERT also welcomes the report *"LAB – FAB – APP Investing in the European future we want"* presented by M. Pascal Lamy and the independent High-Level Group in July 2017[2].

The "Lamy Report" draws up a vision and eleven strategic recommendations to maximise the impact of future EU research and innovation programmes. It also recognises that research and innovation are essential for the future of Europe.

ERT takes the opportunity to contribute to this debate by making the following comments.

1. Importance of research and innovation

Research and Innovation (R&I) continue to be the basis for progress, employment and high living standards in our countries. However, EU Member States have failed to reach the 3% annual GDP dedicated to R&I and as a result the EU is losing ground compared to other competitive nations.

The fundamental role played by industry is underlined in the report. ERT would like to emphasize that innovation is a critical factor for large scale European companies to stay competitive globally. However, we note that the European companies are facing more difficulties in turning knowledge into real business than their foreign competitors and in recruiting talents.

In addition, citizens generally mistrust innovation and consider it disruptive. There needs to be a reestablishment of this trust. China and other Asian countries are strong producers of researchers and have focused a massive amount of resources on their research programmes.

The current debate on the future of the EU Multiannual Financial Framework (MFF) is an opportunity to discuss the importance of innovation for Europe and determine priorities for the competitiveness of industry (under MFF Heading 1).

2. The future of research and innovation in EU programmes

ERT has supported the current Horizon 2020 as a vital boost to R&D and the innovation needed in Europe to drive sustainable growth and increase global competitiveness. It is a necessary tool to help address Europe's widening innovation gap with its major counterparts.

For the next Framework Programme ("FP9") ERT proposes the following:

[2] http://ec.europa.eu/research/evaluations/pdf/archive/other_reports_studies_and_documents/hlg_2017_report.pdf

1) EU programmes should have a **greater focus on impact** (see Recommendation 4 in the "Lamy report"), while reducing red tape. In this context, ERT makes the following recommendations:

   - ✓ Further **increase industry participation** in R&D projects as part of the FP9. Two-third of R&D expenditure in the EU comes from industry but only 1/4 funding goes to industry. The important role of industry should be recognised. For instance, if a research institute or a start-up develops a technology alone, without a strong industrial partner, it often lacks the capital, experiences and an international sales network that are necessary to rapidly deploy an innovative technology.
   - ✓ For mission-driven R&D, **regulatory/policy initiatives will be needed to stimulate the introduction of new technologies/phasing out of older ones**, e.g. for the transition towards a low carbon society.
   - ✓ The proposed **mission-driven approach** is supported - as continuation of the Societal Challenge pillar under H2020. On this regard, it is important to ensure an **interdisciplinary approach and technology neutrality**.
   - ✓ An **enhanced coordination/synchronisation** of the European work programmes (H2020, FP9, structural & cohesion funds - ESIF - & EFSI) with national and regional efforts, especially for the mission-driven actions addressing societal challenges, is strongly recommended. This desire for synergy is already there since at least one decade. However, in practice it turned out that the feasibility has been difficult. The proposal in the "Lamy report" for the EU R&I programme to set the agenda for R&I investments within the structural funds makes sense.
   - ✓ **Need for systemic innovation** to transform whole systems through an interdisciplinary approach – new Key Enabling Technologies (KETs) reflecting latest developments and trends as building blocks are required (so-called Core Technologies: e.g. Cybersecurity, Data Analytics & AI, Software, Distributed Energy Systems, Energy Storage, Additive Manufacturing, etc.).
   - ✓ **Further measures are needed to increase the success rates and to reduce administrative burdens** to get more industry on board. Simplify cost claiming and align with industry accounting practices. Introduce higher flexibility in the calls, e.g. in the ICT area speed is essential for success.
   - ✓ **Use existing good practices** in Public-Private Partnerships (PPP) or Joint Technology Initiatives (JTI) to measure or evaluate impact ("Hard"/"Soft" KPIs).
   - ✓ **Right framework conditions for innovation** are needed: see section 3 below.

2) As underlined in the report (see Recommendation 1), **additional resources** should be invested in R&I to meet the many societal challenges that we face. Furthermore, ERT urges the European Commission to monitor and encourage **participation of large scale industry and SMEs** in future EU programmes which has remained limited.

3) The planned **European Innovation Council** (EIC) could contribute to enable innovation to reach markets. It could provide top-level strategic advice for improving framework conditions (see section 3 below). It could also simplify access to EU innovation support for SMEs including start-ups, while not adding one extra layer of governance.

4) The “Lamy report” correctly stresses **the need to make EU State-Aid rules** more innovation-friendly and to have a better **global level-playing field** (Recommendation 6 “Rationalise the EU funding landscape and achieve synergy with structural funds”). The proposal to extend exemptions to innovation-oriented projects of cross-border nature should be developed further. ERT urges an open debate on this.

5) **Adapt specific current obligations under H2020**, targeted to support academic research, in order to support innovation, e.g.:
    - Open access to research data and other results should only apply on a voluntary basis. Industry is in favour of optimal re-use of data, provided that:
        - granting access remains voluntary, with the right to opt out, the protection of intellectual property, confidential information and personal data (e.g. privacy) is safeguarded, and
        - applicable security rules (e.g. export controls) and legitimate commercial interests are respected.
    - Research integrity and the European Charter for Researchers and the Code of Conduct for their Recruitment.
6) Provide **more specific targets** of certain EU programme resources and budgets toward more **radical market-creating innovation** (in line with Recommendation 2 in the “Lamy report”).
7) **More flexibility** is also required so that future EU programmes respond in a more dynamic way to actual needs of actors in innovation (timelines and topics).

Incremental innovation or disruptive solutions: what needs to be done to remain competitive*?*

For FP9 we need both incremental and disruptive innovation. These objectives are not in conflict. It rather depends on how we do it. We need to do breakthrough research with industry involvement. It is the industry’s role to bring the market needs into the innovation process.

1. Breakthrough R&D&I

An interdisciplinary approach to R&D&I is highly necessary as many technology areas (the so-called “KETs – Key Enabling Technologies – and many new ones are needed compared to the “older” ones) are required to achieve the targeted transformation of our manufacturing, or transport, or energy systems.
In this context it is important to highlight the fact that energy has such a high importance in Europe but is under H2020 only addressed under Pillar 3. An idea to explore further would be to introduce under Pillar 2 the topic “Energy Conversion technologies” as one of the new KETs. Another idea would be to have a focus on “blue sky” energy R&D in Pillar 1.

2. Helping to get innovations to the market

Public support should only be provided where a concerted action is clearly needed for a new technology or business model to take off, e.g. “power to X” can only develop if the EU creates the necessary regulatory framework, acts as a champion of innovation and performs an independent strategic advice function. The EIC (European Innovation Council) could take an important role here.

3. Need for an enabling regulatory framework

The "Lamy report" rightly stresses that **addressing Europe's innovation deficit requires more than public money**. However, it fails to address the regulatory environment, which needs to be changed in order to foster innovation. It needs to be made less "risk averse" and more innovation friendly. It is about mainstreaming innovation across all EU policy domains by applying an **Innovation Principle** and by designing demand-side innovation. ERT was therefore pleased and reassured that the EC confirmed its commitment to implement the Innovation Principle through Better Regulation in all policy areas (see the recent Communication on EU industrial policy strategy)[3].

Regulation has indeed a strong influence on innovation and on business priorities. Well-drafted legislation can stimulate innovation whereas inadequate legislation can stifle it at the expense of future competitiveness. In 2016, ERT companies identified a set of concrete cases illustrating the strong interconnection between regulation and innovation.

Fixing regulatory procedures alone will not be sufficient. An enabling regulatory framework should be based on the following principles:

1) **Proportionate, pragmatic and evidence-based policy making**. Policymaking based on evidence and good science, provides the means to achieve both social and environmental protection and productive innovation. It also provides an objective basis for both policy makers and investors to decide whether or not to invest in new technologies or new business models.
2) Due consideration to ensure that the **appropriate policy instruments and mechanisms** are in place and improved where necessary to ensure regulation supports and does not stifle innovation, including:
    - Better Regulation Agenda
    - Better Regulation Toolbox
    - REFIT Platform
    - Impact assessments
    - Scientific Advice Mechanism
    - European Innovation Council
    - Right to challenge
    - "Sunset" clauses

4. Developing ecosystems to spur innovation

Large scale industrial companies actively collaborate with SMEs, start-ups, researchers and other stakeholders within existing ecosystems. The BrainPort Innovation Hub (in The Netherlands) is probably an archetypal case of a well functioning ecosystem. ERT also greatly values Europe's potential like its internal market, a skilled workforce, its renowned scientific institutions and technological capabilities.

However, despite these valuable initiatives and elements, Europe lags behind other regions of the world with regard to encouragement of disruptive market-oriented innovation,

3 Brussels, 13.9.2017 COM(2017) 479, Investing in a smart, innovative and sustainable Industry A renewed EU Industrial Policy Strategy.

sustained and strategic efforts to bring ecosystems to the next stage and identifying potential areas for deregulation.

The “Lamy report” correctly emphasizes that **boosting the impact of R&I policy is a collective responsibility**: involving public authorities, industry, research, academia and citizens. This is part of the cultural change needed in Europe. Again the innovation principle could help driving the public debate in this respect.

ERT identifies the following measures to support the development of innovative ecosystems:

- ✓ With regards to Recommendation 3 in the report “Educate for the future and invest in people who will make the change”: the report rightly calls for **strengthening education and entrepreneurship** in support for innovation. This is also a way to mobilise and involve citizens in innovative activities (see Recommendation 8 “Mobilise and involve citizens”).
- ✓ Improve the effectiveness of innovation funding by **redirecting public spending towards future-oriented objectives, cross-institutional cooperation and mission-oriented approaches** addressing overarching challenges, aimed at greater and long-term impact (Recommendation 5 “Adopt a mission-oriented, impact-focused approach to address global challenges”). The UN Sustainable Development Goals could serve as a reference for designing a mission-oriented approach. Such approach could identify the contribution from industry and SMEs.
- ✓ While encouraging all partners to communicate more effectively the benefits science and innovation can bring to address the societal challenges (see Recommendation 11 “Better capture and communicate impacts”), we should also **involve citizens in the debate** on the role of science and innovation.

ERT suggests the following additional measures:

- ✓ Create added value for the EU, not replication of national programmes.
- ✓ Invest in developing government officials’ aw**a**reness, knowledge and innovation-related skills.
- ✓ Address corporate risk aversion.
- ✓ Evaluate potential for deregulation.

<u>European start-ups</u>

With regards to Recommendation 2 in the report “Build a true EU innovation policy that creates future markets”, ERT would also like to recall the recommendations made in its published document “Start-Ups/Entrepreneurship in the Digital Economy” (2015). These recommendations should in principle be applied for all sectors:

- ✓ Completion of the EU Single Market
- ✓ Innovation-friendly data regulations
- ✓ Reducing red tape
- ✓ Providing tax incentives for start-ups and those investing in start-ups
- ✓ Providing public funding
- ✓ Facilitating participation by start-ups in public procurement

- ✓ Reducing personal impact of start-up failure
- ✓ Promoting ICT skills and entrepreneurial culture[4]
- ✓ Accessing talent
- ✓ Promoting establishment of effective start-up initiatives and organisations

The connectivity challenge

In the future, innovation will be closely linked with and stimulated by connectivity. This highlights how important completion of the Digital Single Market should be for Europe.

As indicated earlier in this paper, the right market conditions and regulatory environment are required for innovation to prosper. Successful development of the Industrial Internet in Europe will to a large extent depend on a reasonable and harmonised EU regulatory framework (See "ERT position paper on Industrial Internet", September 2016). The example of new technology standards development emphasizes how important framework conditions are for encouraging businesses and research institutes to cooperate.

5. Conclusion

There is increasing momentum for the EC and Member States, together with industry and other stakeholders, to stimulate the debate on innovation and to improve overall framework conditions.

As recommended in the "Lamy report", innovation should remain a high priority. It is essential for long-term industry competitiveness and for the European economy in terms of growth and employment. Innovation benefits EU citizens and the environment, especially to meet challenges such as energy transition, aging population and chronic diseases, etc. We now also need to ensure that innovation is embraced by all.

A stimulating environment for innovation relies on a variety of factors. These need to be appropriate, supportive and aligned for innovation to flourish. For instance, public sector funding cannot compensate for a regulatory environment which stifles innovation. The regulatory cases identified by ERT companies in 2016 provide an indication of the diversity of policy obstacles which can be encountered by innovators.

Funding excellent basic research remains a key long term driver for innovation. ERT welcomes the EC's confirmation that it will implement the Innovation Principle in conjunction with the Better Regulation agenda and is confident this will significantly contribute to an improved policy framework for European innovation. Further ideas are proposed to encourage new ecosystems and disruptive market-oriented innovation.

ERT invites policy-makers and other stakeholders to discuss the principles outlined in this paper to support the development of the strong innovation framework that the EU urgently needs.

[4] ERT has been actively involved in the wider debate regarding skills and entrepreneurship. See for instance the booklets on "Skills for a digital world" (2017) and "Skills and Employability" (2015).

ANNEX: Summary of recommendations made in the LAB-FAB-APP "Lamy report"

1. Prioritise research and innovation in EU and national budgets
Action: double the budget of the post-2020 EU research and innovation programme.

2. Build a true EU innovation policy that creates future markets
Action: foster ecosystems for researchers, innovators, industries and governments; promote and invest in innovative ideas with rapid scale-up potential through a European Innovation Council.

3. Educate for the future and invest in people who will make the change
Action: modernise, reward and resource the education and training of people for a creative and innovative Europe.

4. Design the EU R&I programme for greater impact
Action: make the future programme's pillars driven by purpose and impact, fine-tune the proposal evaluation system and increase flexibility.

5. Adopt a mission-oriented, impact-focused approach to address global challenges
Action: set research and innovation missions that address global challenges and mobilise researchers, innovators and other stakeholders to realise them.

6. Rationalise the EU funding landscape and achieve synergy with structural funds
Action: cut the number of R&I funding schemes and instruments, make those remaining reinforce each other and make synergy with other programmes work.

7. Simplify further
Action: become the most attractive R&I funder in the world, privileging impact over process.

8. Mobilise and involve citizens
Action: stimulate co-design and co-creation through citizen involvement.

9. Better align EU and national R&I investment
Action: ensure EU and national alignment where it adds value to the EU's R&I ambitions and missions.

10. Make international R&I cooperation a trademark of EU research and innovation
Action: open up the R&I programme to association by the best and participation by all, based on reciprocal co-funding or access to co-funding in the partner country.

11. Capture and better communicate impact
Action: brand EU research and innovation and ensure wide communication of its results and impacts.