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# A BREATH OF INNOVATION: BUSINESSEUROPE RECOMMENDATIONS ON FUTURE OF EU RESEARCH AND INNOVATION POLICY

## KEY MESSAGES

- 1 The European Union's prosperity is based on high added value products and services. It largely depends on its innovation capacity and creation of an open and common marketplace of ideas, turned into an economic value.
- 2 In the interest of its global competitiveness, the EU will have to regain the innovation leadership and capture more added value from innovation through an investment-friendly environment, as well as by scaling up investments in R&D and especially in close-to-market innovations.
- 3 The EU will have to build a true culture of innovation, encouraging reasonable risk-taking rather than over-playing the precautionary principle, and balance it with an "innovation principle".
- 4 The EU will have to guarantee a more important role for scientific and technological evidence in the policy process, as well as a strong consideration of the impact on innovation.
- 5 Due to steadily declining industry participation in the framework programmes, the EU needs to incentivize higher involvement of the business sector. The EU should also adequately align Horizon 2020 objectives with industry activities through sufficient consultation and provide for consistent figures through business participation.

## KEY FACTS AND FIGURES

<p>EU's R&amp;D gap with the US amounts to \$100 billion a year.</p>	<p>In 2014, China takes over the EU in terms of R&amp;D investments.</p>	<p>Only 27.5% of all patent applications come from European companies.</p>	<p>Industry participation declining from 43% in FP4 to only about 25% in FP7.</p>
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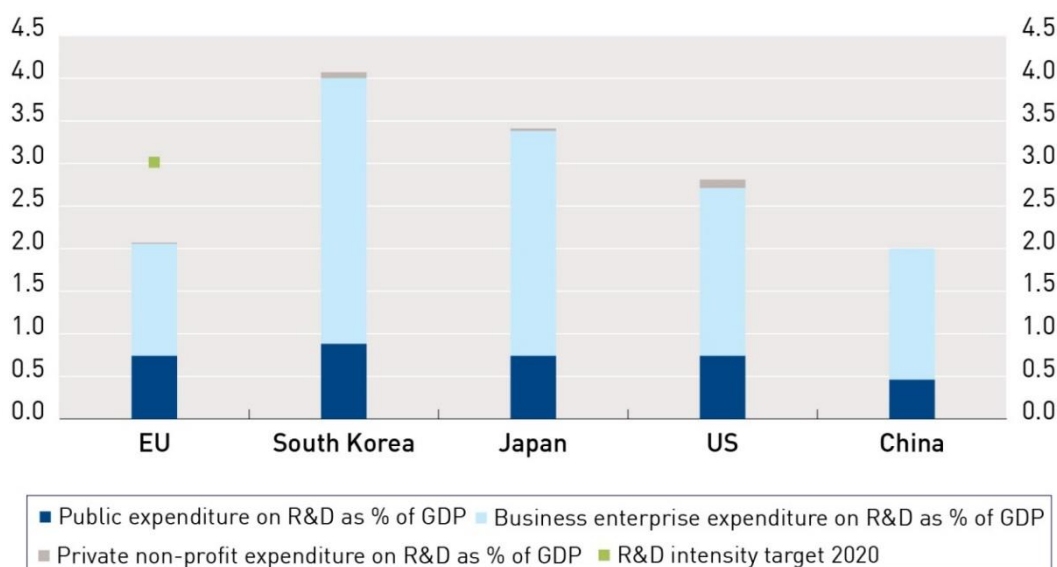
### A Breath of Innovation: BUSINESSEUROPE recommendations on future of EU research and innovation policy

Innovation, the process whereby new ideas are generated and turned into economic value, is a crucial requirement for economic growth in the long term and for job creation in Europe. What Europe needs is an open marketplace of ideas and the framework conditions, which enable enterprises to look in all directions to develop solutions for emerging challenges. In view of economic prosperity Member States must actively support growth-enhancing policies, notably in research & innovation.

#### ***The EU will have to regain global innovation leadership***

However, the EU is still lagging behind major competitors in R&D investments and turning them into marketable products or services. Emerging economies like China are rapidly catching up as the competition for global innovation leadership positions. R&D investments in the EU are hardly on track to reach 3% target by 2020 (Chart 1). Europe will have to boost public R&D expenditures, both on EU and national levels, and improve framework conditions in order to leverage business investments. It will have also to speed up close-to-market innovation. While the quality of European research is exceptional and has been responsible for many new technologies used worldwide, this scientific leadership is not sufficiently translated into industrial gains. The key challenge is to create an investment friendly environment in Europe and to find means to capture more added-value from innovation in Europe.

**Chart 1**  
**R&D Intensity broken down by sector, 2012 and R&D Intensity targets 2020**



Source: European Commission, 2014

***The private sector is leading on R&D investments***

As for the private sector, there was a remarkable resilience of R&D investment growth from top world R&D investors in a period of economic uncertainty. Most of the European companies increased their investments in R&D by 6.3% during the 7th EU Research and Innovation Framework Programme (FP7) life time, which is above world average of 6%, but below their US counterparts (8.2%). Some European sectors proved to be leading in R&D investments, notably automotive sector, chemical sector, industrial engineering and aerospace & defence.

***Horizon 2020 is an important step to bring innovation closer to the market...***

The adoption of the Horizon 2020 Package has been an important step to install a more innovation-driven policy approach, in particular to make EU R&D spending more effective to incentivise a faster market uptake of innovative solutions. But for the EU to be a global innovation leadership much more is needed.

***... But much more is needed***

Capturing value from Europe's research by means of close-to-market innovation will be achieved by scaling up investment in R&D and innovation combined with a more qualitative approach, building a true culture of innovation and encouraging reasonable management of risk rather than over-playing the precautionary principle, but also promoting a science-based policy making, ensuring a smart implementation of Horizon 2020, removing obstacles to commercialisation of research results, enhancing the regulatory framework supporting innovation and streamlining the jungle of EU funding mechanisms.

**This position paper presents a range of concrete recommendations in order to make progress in these respective fields. This is what companies expect from policy-makers to give them breath to innovate in the EU.**

Digital transformation will be a major enabler for Europe to succeed in the global innovation race. It is estimated that data-driven innovation could leverage €330 billion a year in the EU by 2020. The use of data will increase industrial productivity, improve healthcare through more accurate diagnosis and more effective treatments, enhance workforce skills and enable businesses to understand and reach new consumers more effectively. Across all industrial and societal sectors, ICT technologies are bringing value and are enabling a digital transformation. Europe needs to succeed in this process, if the continent wants to be recognised as a leading innovator.



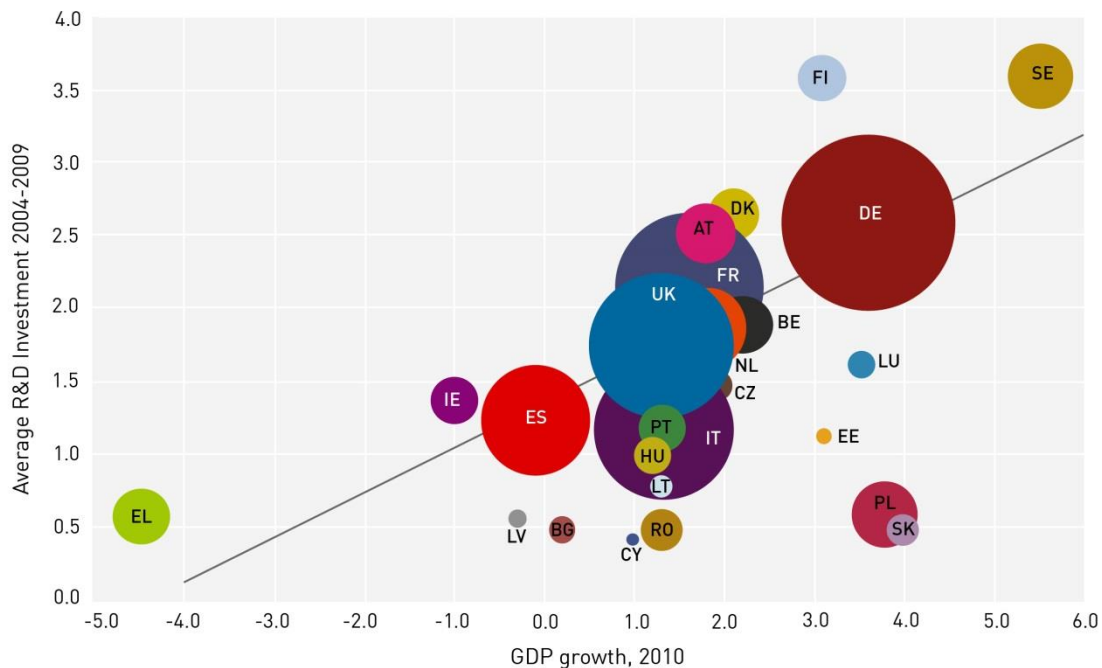
## 1. VALUE OF INNOVATION FOR ECONOMIC GROWTH

R&D and innovation are crucial requirements for a sustained economic growth in Europe. EU companies invest in R&D to deliver innovative products and services and create value, thereby increasing employment opportunities in Europe. These efforts must be supported, in partnership with the public sector.

As a result of the financial crisis and when a number of Member States have undertaken measures to strengthen public finances, the extent to which Member States have managed to safeguard R&D budgets has varied considerably. At such difficult times, Member States should rather ensure to increase the magnitude of public and growth-enhancing investments in R&D and innovation. Special attention should also be paid to the quality of spending and that the investments are directed towards stimulating innovation in companies to deploy the results so that society can benefit from these activities.

As the Chart 2 shows, investments into R&D are part of the solution for future growth.

**Chart 2**  
Investments into Research & Development



Source: European Commission, 2012



## RECOMMENDATIONS

- To increase national public spending on R&D and innovation, including the increase of the quality and efficiency of spending, measured through appropriate indicators. In particular, national and EU authorities must ensure the right prioritisation of their funds and that the gap between research and market deployment of new products and services is bridged and supported by adequate funding.
- To make good use of present public funding capacities by strengthening innovation networks and clusters of small and large companies, universities, research institutes and public agencies pooling together skills, know-how and funding for commercialisation of innovations.
- To foster business-based innovation by providing appropriate fiscal incentives such as tax exemptions for expenditures on R&D and innovation where appropriate.

## 2. INNOVATION-FRIENDLY GOVERNANCE AND POLICY-MAKING

### 2.1. Innovation Principle

A balanced approach to risk is a key factor in enabling innovation. Europe suffers from a rather risk-adverse attitude, which does not contribute to create the conditions needed to innovation.

Europe needs to foster a culture of innovation, which can also help to bridge the gap between science and citizens, leading to a much stronger acceptance of innovative technologies by the society. This innovation culture needs to permeate policy making so that innovation is better recognised and supported by public and private stakeholders, as well as citizens.

EU policy-makers also have a role to play in ensuring the regulatory conditions are fit for innovation, i.e. avoid excessively prescriptive and risk-adverse legislation which would stifle innovative efforts from industry.

As a complement to the Precautionary Principle, the EU should foster an “Innovation Principle” by which enterprises and people are enabled to develop ideas, technologies and services while ensuring that related risks are properly managed rather than avoided.

## RECOMMENDATIONS

- To introduce an “Innovation Principle” in the EU policy-making process, starting with the European Commission Work Programme. As a complement to the “Precautionary Principle”, it would imply analysing and addressing the impact a proposed piece of legislation could have on innovation.
- To develop, in close collaboration with relevant stakeholders, a guidance document outlining a common methodology for assessing the impact any new legislative proposal could have on innovation.



## 2.2. Evidence-based policy making

Innovative companies need a sound and reliable regulatory environment conducive to innovation. This can only be achieved through evidence and science-based policy-making. EU companies are more and more concerned by the fact that decisions are taken on the basis of ideology rather than science. As a matter of fact, Europe lacks transparent mechanisms of decision-making on the basis of scientific evidence. This requires a role for education system and better science communication.

### RECOMMENDATIONS

- To have a strong role and high-level position of a scientific and innovation adviser in the policy-making process within the European Commission, with adequate resources and a clear mandate.
- To safeguard a more important role for scientific and technological evidence in the political process, as well as a strong consideration of the impact on innovation in policy processes.
- To establish a new and coherent process for the collection and use of scientific advice that should be entailed in policies in order to ensure transparency and credibility.
- To ensure a more coherent performance of impact assessments and legislative proposals, including proper exploitation of the internal resources of the EC (e.g. Joint Research Centre).
- To improve science communication and a structured exchange with science stakeholders.
- To ensure that evidence and science should constitute the basis for sound EU legislation. This also entails an application of the precautionary principle based on solid scientific evaluations.

## 3. SPECIFIC POLICY RECOMMENDATIONS

### 3.1. Implementation of Horizon 2020 and industry participation

Horizon 2020, the new framework programme is an instrument supporting sustained economic growth and strengthening the role of European business as a leading global actor and participant in research and innovation projects. A number of concerns of the industry, calling for appropriate design, more funding and proper implementation, was addressed by the EU institutions.

However, a number of remaining issues need to be addressed during the implementation stage of Horizon 2020 and its interim evaluation by the end of 2017. Whereas large companies and SMEs together perform well over 60% of all R&D in Europe, private sector participation in the research framework programmes has been declining steadily for fifteen years. In terms of funding, industry participation passed from 43% in FP4 to only about 25% in FP7.



It should be recognised that oversubscription is not an indicator for the attractiveness of any given funding program but an indicator of available innovation potential, which cannot be utilized due to missing financial resources.

## RECOMMENDATIONS

- To provide consistent figures of the involvement of business in terms of the share of the budget and the share of participations for the total of Horizon 2020 (including Joint Technology Initiatives, contractual Public Private Partnership and European Institute of Technology & Innovation). These figures should then serve as a yardstick for the innovation orientation of Horizon 2020, as compared to previous Framework Programmes, and to incentivize involvement of the business sector.
- To ensure that industry is sufficiently consulted through the appropriate channels in the roll-out of implementing measures, including calls for proposals and prioritizing. This is important to ensure adequate alignment between Horizon 2020 objectives and industry activities.
- To stimulate industry participation in EU collaborative research and innovation projects by:
  - reducing swiftly the heavy administrative burden (e. g. by limiting the scope of calls and the length) and longer lead times compared to the benchmark established by some national programs. This implies not only a faster evaluation of the proposals, but also speeding up the whole preparation process,
  - improving the alignment and coordination between Horizon 2020 and the Member States' research and innovation funding programmes,
  - ensuring appropriate balancing of the Horizon 2020 evaluator teams with adequate involvement of industry experts, in particular for the proposals with higher Technology Readiness Levels,
  - addressing concerns of the intellectual property rights (IPRs) regime during the forth-coming interim evaluation of Horizon 2020. The actual IPRs regime is still favouring academia over industry (e.g. with its actual joint ownership regime) and is also supporting a protectionist "in Europe First or Only" approach (e.g. via its Affiliate Clause).
  - minimising oversubscription to an appropriate level of competition, e.g. through an appropriate programming and description of the funding topics.

### 3.2. Synergies between Horizon 2020 and Structural Funds

Industry, regions and Member States must work closely together to capitalise on the available European Structural and Investment Funds (ESIF), in particular in view of their reinforced focus on innovation. Allowing projects to be co-funded - within certain boundary conditions - from Horizon 2020 and ESIF, in order to achieve better synergies between EU, national and regional funding levels, is, in principle, something positive. However, it is crucial that the funds are used in an effective way. ESIF investment in infrastructure and R&I projects can help drive economic growth, particularly in less developed regions of Europe.



## RECOMMENDATIONS

- To provide for further detailed information and guidance for the users of both funds in view of potential synergies. A particular concern is that the simplification achieved in Horizon 2020 could be annihilated by the complexity that would arise from imposing combined project funding from Horizon 2020 and ESIF. Each fund is managed in different ways and at a different level (Horizon 2020 decision-making is centralised while the ESIFs are decentralised), and the two processes are not synchronised. Therefore, instead of combining funds at the level of individual projects, it is better to aim for synergies at the strategic/programmatic level.
- To ensure that ESIF co-funding of H2020 projects would remain facultative and never become a pre-condition or additional selection criterion for funding from Horizon 2020, because of uneven availability of ESIF funds across Member States.

### 3.3. New business models and products – From Research to Retail

Industrial innovations are created in global value chains. New investments are directed to regions where the growing markets are or where the best knowledge lies. There are many examples of where new ground breaking products/services have needed new innovative business models before becoming commercially successful. There are also examples where existing technologies have been used in combination with new business models to create commercial successful cases.

These innovative models are a key element of the future of R&I policy. The development of new business models is first of all a task for private stakeholders, e.g. companies. However, the Commission can support these activities by generating appropriate framework conditions and diffusing knowledge on best practices.

The EU manufacturing sector is challenged by strong global competition and changes due to the digitalisation of the economy. Leveraging advanced manufacturing technologies and other key enabling technologies (KETs) through the whole value chain and promoting the adoption of such technologies within and across sectors would help to meet these challenges and profit from them.

## RECOMMENDATIONS

- To develop and execute quickly a strategy which aims at creating investment friendly environment in Europe and to find means to capture more added-value for the Europe from global value chains.
- To ensure greater synergies between academic and private research in order to shorten the time period to bring innovation to the market.
- To secure greater attention to the interplay between services and products, new manufacturing techniques, digitalisation and the role of new innovative business models. At least two out of the three main pillars of Horizon 2020 should address both services and business model innovation.
- To ensure an appropriate regulatory framework reflecting innovative business models: it is of key importance that any legislative initiative is checked against its possible impact on business models and innovation, in order to thoroughly weigh costs and benefits.





### **3.4. European Research Area and Skills**

Developing the European Research Area (ERA) is a necessary precondition for fighting fragmentation in Europe's innovation systems and taking full advantage of efforts at regional, national and European levels to deliver in a concerted way effective and innovative solutions for the societal challenges. Europe needs actions to attract the best brains and the most innovative companies. The European Research Area should be developed with excellence in mind. Since its creation in 2000, the ERA has moved in the right direction, but more effort is needed to complete it by improving the supply of well-qualified researchers, fostering temporary public-private exchanges of R&D staff and facilitating transnational collaboration.

While there are several places in Europe where tertiary education is of very high quality there are also ample of examples where the quality can be questioned partly due to the fact that public spending on higher education is at a rather low level. Europe needs to invest more in education on all levels. Access to skills is the backbone of a well-functioning and effective R&I system.

## **RECOMMENDATIONS**

- To ensure that the support and development of skills are essential elements in completing the ERA. Collaboration between universities, public research institutes and industry must be further encouraged. Therefore initiatives such as European Institute of Innovation and Technology (EIT) and its Knowledge and Innovation Communities (KICs) should aim to create research, education and entrepreneurship hubs which can truly compete with the most attractive regions globally.
- To ensure that funding of tertiary education is at a level that is internationally competitive.
- To use the KICs under the new EIT Regulation to extend knowledge sharing and encourage the development of skills, including in entrepreneurship. In addition, it is important to create new KICs on the basis of the needs of the current industrial crisis and societal challenges.

### **3.5. State Aid rules**

The State Aid rules provide an important framework for industry when seeking co-financing from the state. They can significantly influence the overall R&D&I activity of European companies, as well as their ability to take risks and bring innovative products to the market while remaining globally competitive.

The global situation should also be particularly taken into account, and particularly the fact that other regions of the world, like US, India and China have very supportive cluster policies.



## RECOMMENDATIONS

- To ensure smart implementation of the revised state aid rules for R&D&I and the General Block Exemption Regulation and make use of the new state aid evaluation tools to consider possible improvements in due time.
- To shorten the length of the clearance procedure, as it strongly influences the time-to-market of the results from research and innovation efforts.
- To avoid distortions of competition within the single market for R&D&I, while at the same time seek to ensure a level playing field for EU industry worldwide through the World Trade Organisation. A workable solution is needed particularly for global subsidy contests between European companies and competitors outside the EU, where the public sponsoring of a competitor is not subject to state aid restrictions. This applies especially to industrial sectors supported by targeted R&D&I stimulus measures in other regions. In addition, the Union should address the lack of a global level playing field by pushing for adequate international (multi or bilateral) agreements and instruments.

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