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**ERAC**

**WORKING PAPER**

**MEETING DOCUMENT**

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From: ERAC Secretariat  
To: ERAC (European Research Area and Innovation Committee)

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Subject: ERAC Plenary 21-22 September 2017 - agenda item 5.3

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ERAC Members will find attached the progress update of the Science, Research and Innovation performance of the EU 2018 report relating to item 5.3 of the agenda of the ERAC plenary on 22 September 2017 in Tartu.

**ERAC - Background note for Agenda point 5.3**  
**Science, Research and Innovation Performance in the EU Report, 2018: Progress update**

35<sup>th</sup> Plenary meeting  
Agenda Item 5.3  
Tartu, 22 September 2017

Over the past months, the European Commission has been developing the new edition of its biennial flagship report "**Science, Research and Innovation performance of the EU**". The Report presents Europe's Research and Innovation (R&I) performance and its drivers, building on over 200 charts and tables and more than 4000 data points.

The Report combines in-house macroeconomic analysis (in part I of the Report) and expert-contributed microeconomic in-depth research (in part II) to create a robust narrative that speaks to an audience of both R&I and Economics and Finance policy-makers and analysts.

Some of the **key messages** that emerge from this analysis are:

1. Digitalisation, globalisation, the ageing of population and climate change are drastically transforming the nature and impacts of innovation and what people expect from it.
2. Innovation in the digital economy is increasingly complex and fast-paced. Its benefits concentrate more and more in Superstar firms.
3. This has deep implications for productivity and economic growth. It also affects inequality via its effects on job creation and destruction and on the distribution of wages. Stronger premiums appear attached to high-skill tasks and downward wage pressure is exerted on lower, and increasingly on middle-level, skilled individuals.
4. Bottlenecks to innovation diffusion stem from large intra-sectoral productivity gaps. These bottlenecks make productivity growth sluggish and lead to income inequality.
5. The changes in the nature and impact channels of innovation have implications for the design and implementation of public science and innovation policy. Policies that support excellence in science, high economic impact from innovation and transformative entrepreneurship<sup>1</sup> are increasingly needed. It is paramount to ensure adequate conditions to reap the benefits of innovation and its diffusion, and to embrace uncertainty.
6. Overall, these changes in innovation dynamics take place faster in the United States than in Europe. This is due to the US' stronger technological performance, notably in rising fields such as Big Data or the Internet of Things, its more robust knowledge flows and its lead on transformative entrepreneurship. Nonetheless, the US faces hurdles to ensure a smooth diffusion of innovation, to boost productivity and to create high-quality jobs.

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<sup>1</sup> "Transformative entrepreneurship" is defined as those new businesses that from their onset have the ambition to become big and provide "disproportionately large contributions to net job creation" (Haltiwanger, 2014) and that invest proportionally more in R&D than older ones (Surowiecki, 2016). In the Report, this concept is approached by the number and capitalisation of Unicorn firms, i.e. firms that reached a market valuation of over USD 1 billion.

7. Europe seems to embrace changes in innovation dynamics at a different pace. Notably, it still remains to capitalise on its excellent scientific base, where it leads globally, and on its strong human capital. While public R&D investment is relatively high, business R&I investment and investment in other intangible assets, such as ICT, economic competencies or skills is lower than in other advanced economies. This generates weaker knowledge flows and lower technological and innovation performance.
8. While general measures of entrepreneurship in the EU are good, Europe's ability to create and scale up rapidly growing firms that can benefit from digitisation is still limited.
9. As a result, Europe's economic structure faces difficulties to engage in faster structural change towards more productive activities, notably towards higher-tech manufacturing and a knowledge-intensive services sector and this, in turn, is affecting investment levels in R&I and other intangible assets.
10. Europe faces large differences across Member States in innovation performance, although that divide is becoming more nuanced and the traditional North-South West-East division is blurring. The divide is still stark in relation to scientific, technological and innovation outputs.

The analysis in the Report has **implications for policy** concerning the need to:

- 1- Continue to increase investment in R&I and other intangible assets, notably in Member States that lag behind, while ensuring higher impacts. This will require enacting structural reforms of the national science and innovation systems to increase the quality of the public investments made. It may include the design and implementation of mission-oriented policy approaches.
- 2- Reshape public support for R&I investment in order to complement existing instruments that support market-creating innovation, where Europe lags behind.
- 3- Rethink regulation in order to support innovation diffusion across sectors, as well as a better monitoring of competition policy to ensure level playing fields in the digitised economy.
- 4- Build the conditions for stronger knowledge flows and innovation diffusion, by boosting open science, open innovation and a European R&I eco-system open to the world.
- 5- Support more conducive framework conditions for innovation and its diffusion, including through the completion of the European Single Market, the adoption of further structural reforms and by strengthening the availability of risk capital for innovation.

The analysis identifies a number of areas where **more research** is needed to provide a sounder evidence base in support of R&I policy: (a) Re-visiting public R&D policy to ensure maximum leverage of business R&D; (b) Coordinating public actions on R&I, skills and social policy for the broader-sharing of the benefits of innovation; (c) Innovation dynamics, market concentration and a level playing field: the role of competition policy in a digitised economy; (d) Policy tools to speed up innovation diffusion.

To ensure the quality of the analysis and to refine it, the Commission services will undertake a number of activities prior to the finalisation of the Report (scheduled for Q1 of 2018), including: (a) the setting up of a Sounding Board of academic, business and policy leaders (composition in Annex); (b) a dedicated Workshop with representatives from ERAC, that shall be scheduled for the first half of October 2017.

**ANNEX: SOUNDING BOARD**

<b>EXPERT</b>	<b>INSTITUTION</b>	<b>POSITION</b>
Bruno Lanvin	INSEAD/ ICANN	Professor/ Member of the Board
Kinga Stanislawska	Entrepreneur/ Venture Capitalist (Experior Venture Fund)	CEO
Ann Mettler	European Commission - European Policy Strategy Centre	Head
Dirk Pilat	OECD, STI Directorate	Deputy Director
Luc Soete	UNU-MERIT	Professor
Irene Mia	The Economist Group	Global Editorial Director
Margareta Drzeniek	World Economic Forum	Senior Director
Debora Revoltella	European Investment Bank - Economics Department	Director
Manuel Muñiz	IE/ Harvard	Dean/Professor
Ward Ziarko	Belgium Federal Government	STI Policy Director