Retos en investigación e innovación in Europa

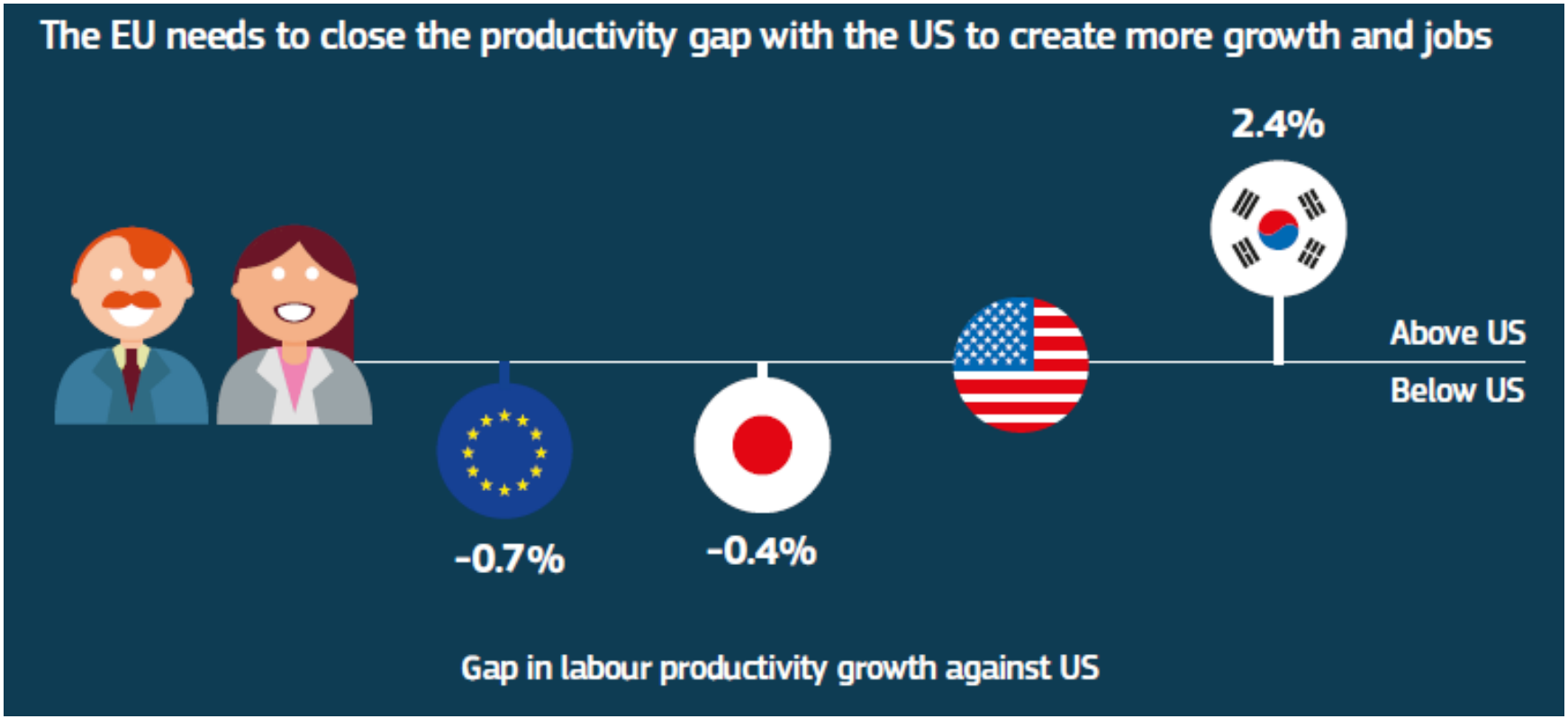
13 Febrero 2017

Octavi QUINTANA – TRIAS

Research and Innovation

European Commission

The EU faces a productivity challenge



Report 'Science, Research and Innovation Performance of the EU 2016'
European Commission, DG Research & Innovation

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Challenges in the EU

⇒ Out of 174 "Unicorns" (private start-up companies with $1 billion+ valuations) in the world, only 19 are from Europe, none is in the Top 10

=> 90% of all data in the world have been generated in the last 2 years

Big and open data will add 1.9% to the EU-28's GDP by 2020

=> Between 2000 and 2013, China's share of world expenditure on R&D increased from 4.6% to 20.0%; between 2000 and 2010, its share of world highly cited scientific publications increased from 2.6% to 11.9%

Coping with the challenges I

- Innovation Union (e.g. EU patent) – Innovation beyond R&D
- Monitoring MS delivery on 3% R&D intensity targets
- Boosting private investment in research and innovation (European Fund of Funds; Maximize use of EFSI for research and innovation)
- European Research Area
- Turning societal challenges into innovation opportunities and future markets
- Training skills: ESF
- Social innovation + public services

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Process dimen-sion	**Product dimension**	**Technology Assessment and Foresight**	**Application of the Precautionary Principle**	**Normative/ethical principles to design technology**	**Innovation governance and stakeholder involvement**	**Public engagement**
Technology Assessment and Foresight		X	Development of Procedures to cope with risks	Which design objectives to choose?	Stakeholder involvement in Foresight and TA	How to engage the public?
Application of the Precautionary Principle		Identification of nature of risks	Is PP applicable?	Choice and development of standards	Defining proportionality: how much precaution?	How safe is safe enough?
Normative/ethical principles to design technology		"privacy" and "safety" by design	Setting of risk/ uncertainty thresholds	X	Which principles to choose?	Which technologies for which social desirable goals?
Innovation governance models and stakeholder involvement		Defining scope and methodology for TA/Foresight by stakeholders	Defining the precautionary approaches by stakeholders	Translating normative principles in technological design	X	How can innovation be geared towards social desirable objective
Public Engagement and Public Debate		Defining/choice of methodology for public engagement	Setting of acceptability standards	Setting of social desirability of RRI outcome	Stakeholders roles in achieving social desirable outcomes	X

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Not mainly about Money & Research although both matter and EU can do better

Mainly about

PEOPLE, PLACES, PROCESSES

Upskilling Europe's people: **Essential**

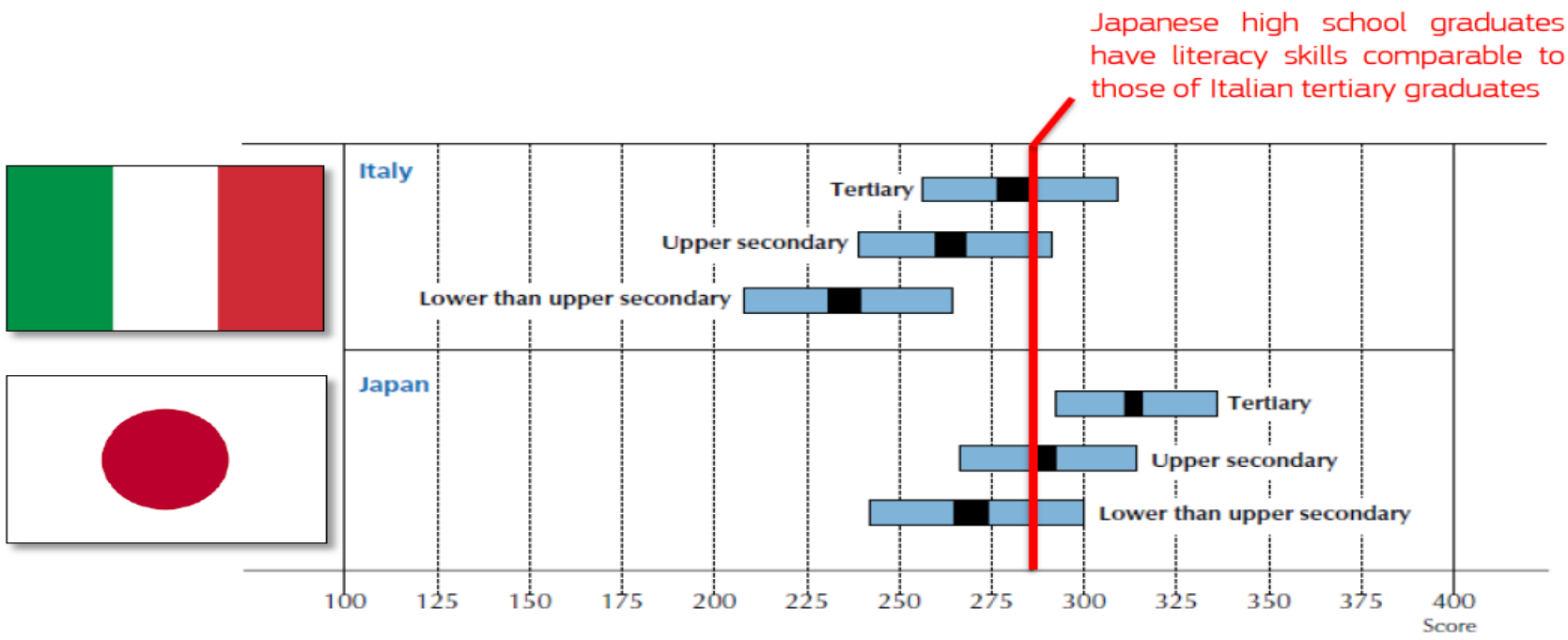
Harnessing Local Trends to **Underpin local Innovation**

EU 1.0 cannot deliver Europe 2.0: **Public Process Transformation**

- Dare to Map all the issues -

It's about PEOPLE

Distribution of literacy proficiency scores and education in Italy & Japan



Source: Survey of Adult Skills (PIAAC) - http://www.oecd.org/site/piaac/publications.htm

Coping with the challenges II

- Infrastructures of XXI century
- Open science: open access, cloud initiative
- Digitisation of industry and economy (regulation + investment)
- Improved conditions for international R&I cooperation
- Internationalization of SMEs
- Involving citizens

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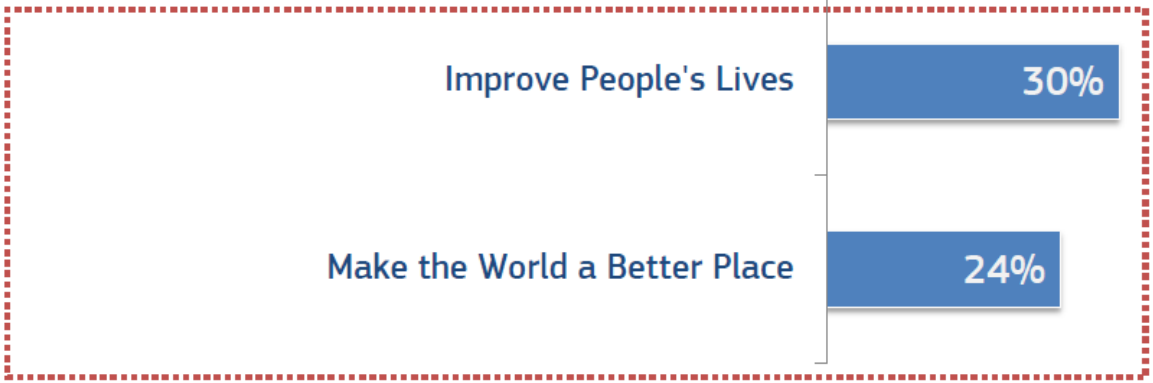
Perception of Innovation

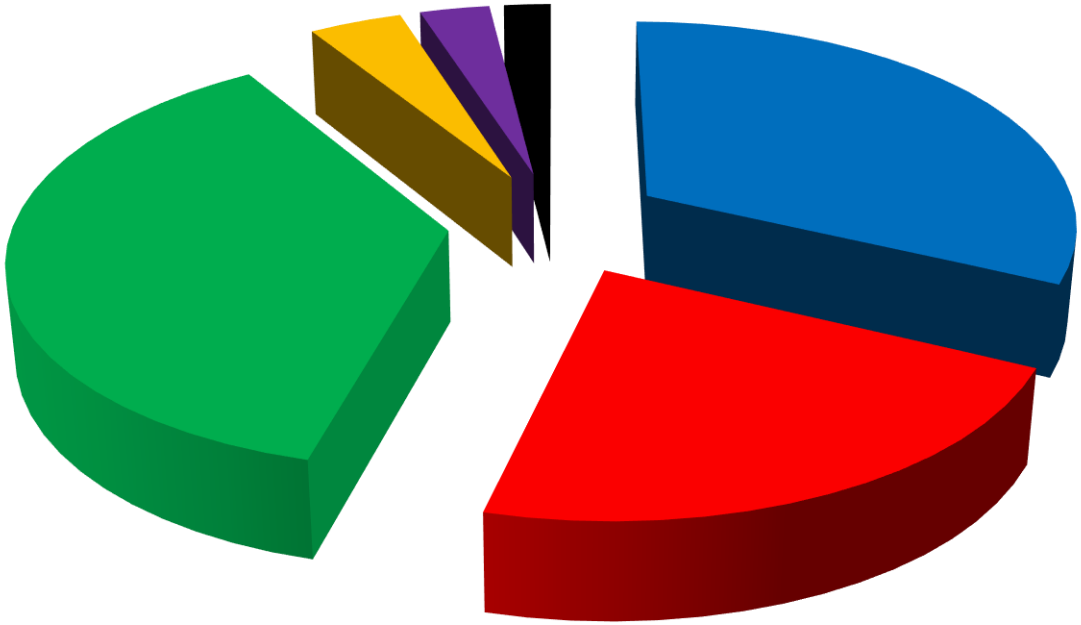
2 in 3 see that tech drives growth



2 in 3 doubt that tech helps Planet & People

€ 77 billion from 2014-2020

Horizon 2020 budget* (in current prizes)



- Excellent science EUR 24.2 billion
- Industrial leadership EUR16.5 billion
- Societal Challenges EUR 28.6 billion
- Other EUR 3.1 billion
- EIT EUR 2.4 billion
- Euratom (2014-2018) EUR 1.6 billion

* Contribution to European Fund for Strategic Investments (EFSI)

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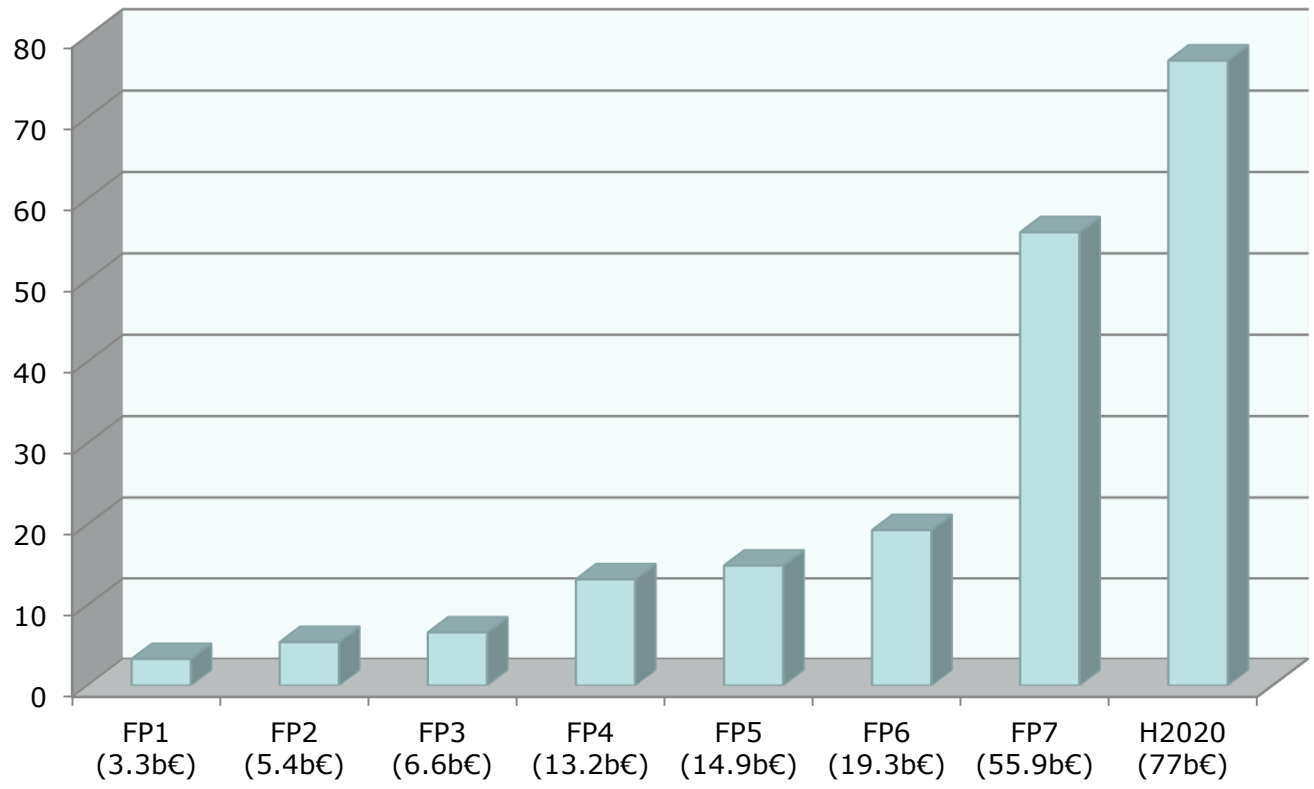
Evolution of the FPs budgets



The successor Framework Programme

1984-87 → **2014-2020**

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2014-2015

PARTICIPANTS

Total
13 748

OPEN TO THE WORLD

22% of budget
allocated to international cooperation topics

FUNDING

universities and research organisations

66%
€10.6 billion

private sector

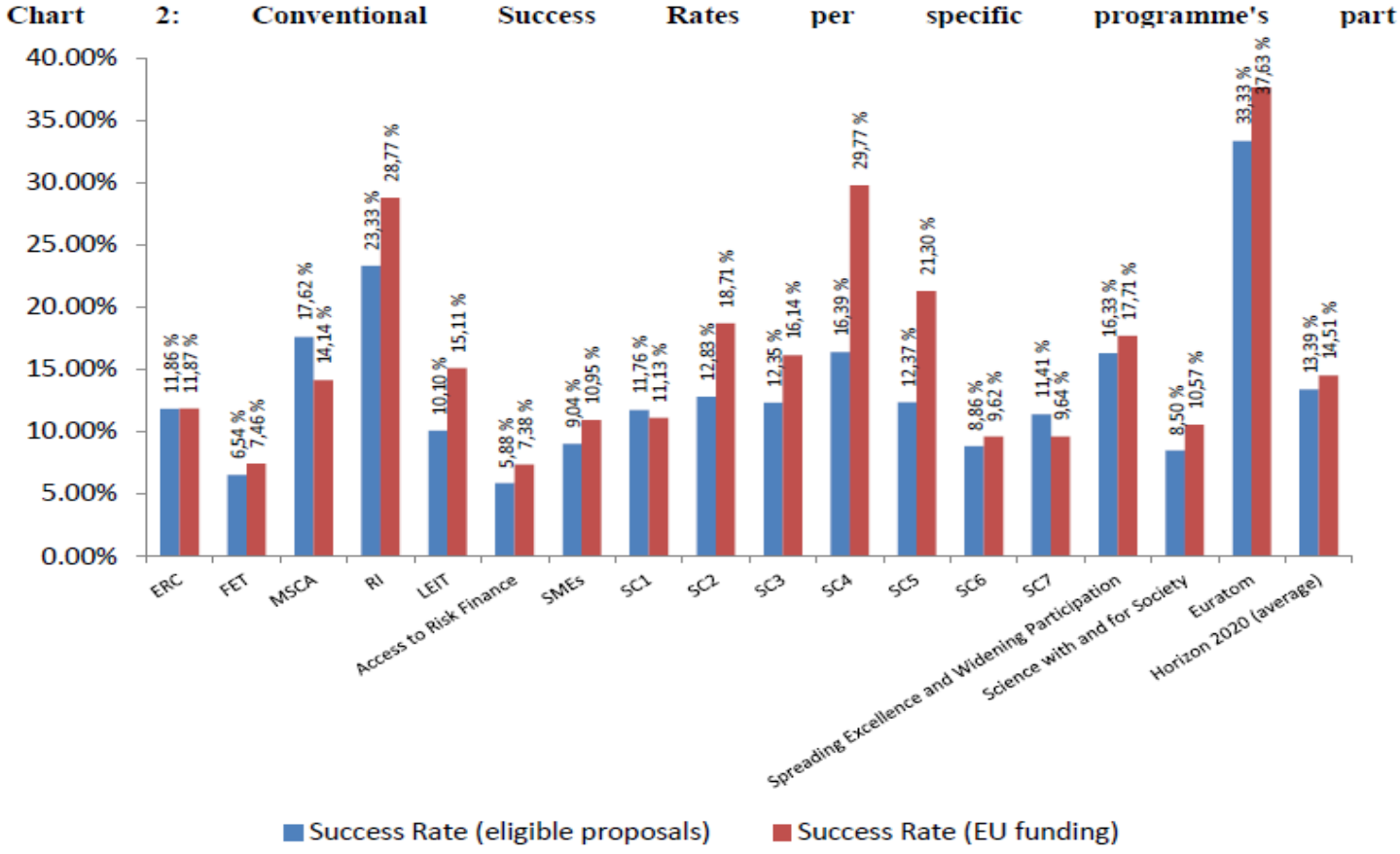
27%
€4.2 billion

public bodies and other

7%
€1.1 billion

OVERSUBSCRIPTION

Average success rates are between 13% and 14% (19% in FP7).



Work Programme 2018-2020
Implementation Objectives

- Big mission-oriented high impact calls and topics
- Simpler, lighter and shorter Work Programme document, notably through clearer language and enhanced readability
- Reduce over-subscription, notably through
  - Better matching supply to demand (number of topics)
  - Broad and well defined topics with budgets to match
  - Use of two-stage calls where appropriate

Horizon 2020 – Interim Evaluation Content

- *Political context - Legal Requirements (art 32 of the Regulation setting up Horizon 2020 and art. 30 of the Rules for participation)*
- *Better Regulation guidelines – raising the bar:*
  - **Effectiveness - do the effects correspond to the objectives?**
  - **Efficiency - were the impacts (benefits) achieved at a reasonable cost?**
  - **Relevance - do the objectives correspond to the needs?**
  - **Coherence - interventions do not contradict others with similar objectives**
  - **EU-added value - additional value from EU activities, compared to what could be achieved at other levels**

Horizon 2020 – Interim Evaluation
Provisional timeline

- *Stakeholder Consultation (Oct-Dec 2016)*
- *Staff Working Document*
  - **Evaluation results based on legal base requirements and 5 mandatory evaluation criteria (Better Regulation Agenda)**
- *High Level Group recommendations (June 2017)*
- *Commission Communication (Q4-2017)*
  - **Overall conclusions on the evaluation results**
  - **State of implementation of the FP7 ex-post HLEG recommendations**
  - **Response to the Horizon 2020 HLG recommendations**
  - **Messages on art. 185 and art. 187 initiatives.**
- *Horizon 2020 Work Programme 2018-2020 integrating main findings from Interim Evaluation (Q4 -2017)*

Foresight: R&I as part of a better future

- Content

- Exploring framework (boundary) conditions:
  - **Political imperatives: vision**
  - **Rising societal challenges and concerns: future scenarios**
  - **Changing R&I policies and practices**

=> An ambitious and realistic vision for the EU enabled by Science and Innovation

- Highlighting transition pathways and game changers:
  - **Key future innovation paths**
  - **Potential game changers**

⇒ *How could the EU's R&I policy best enable it to achieve the vision*

- Key tools:

- BOHEMIA:
  - **December 2016: scenarios (and vision)**
  - **April 2017: key paths and game changes**
  - **October 2017: policy recommendations**

- The Network of Foresight Correspondents: coordination of foresight across the services contributing to a coherent vision.

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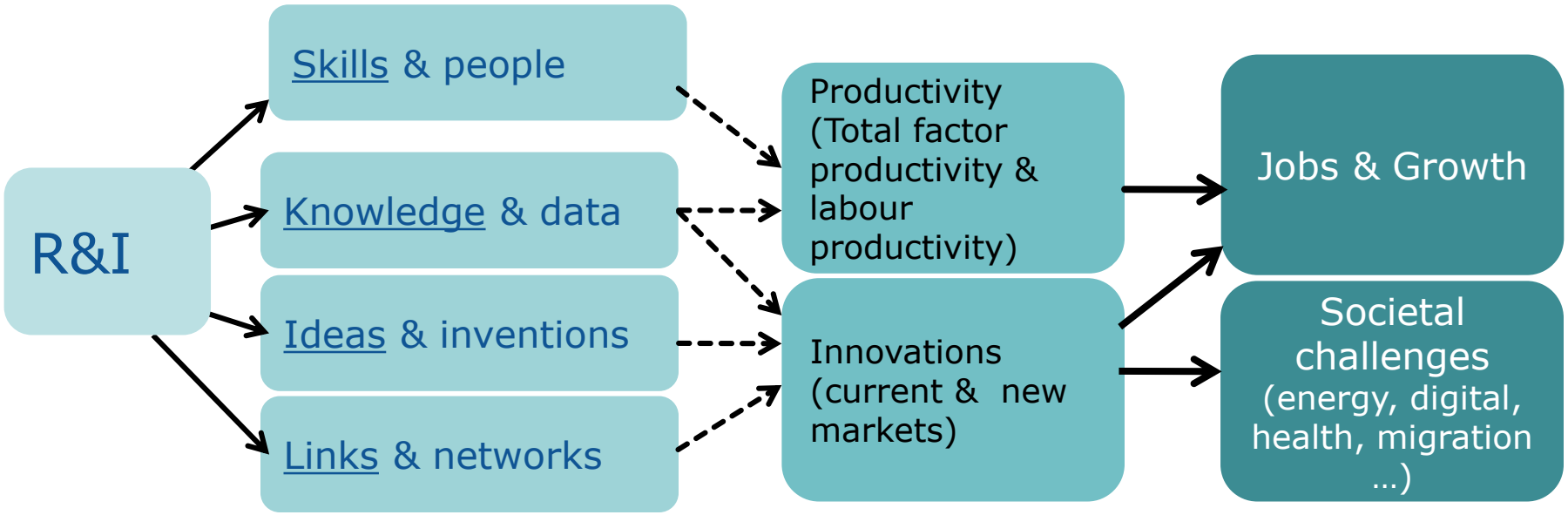
Research & Innovation: Impact on the economy

R&I policies: funding & framework conditions



Micro-/macro-economic & structural policies

Continuity	vs.	Break with the past
Excellence		Cohesion
Top-down		Bottom-up
Cost-based		Output-based
Grants		Loans
International		European only
Collaborative		Single beneficiaries
All stakeholders eligible		Less for big industry

It is the moment for good questions

Migration

- Hot political topic
- Policies based on perceptions

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What can Research can do?

- Current policies = evidence of perception
- Future policies = what works best
- Addressing the roots of migration

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