



**Flanders**  
State of the Art

# Horizon 2020: past and future

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Department EWI*

*Brussels, 4 december 2017*



# Content

- 1. Horizon 2020: past performance in Flanders**
- 2. Horizon 2020: interim evaluation**
- 3. The way forward to FP9**

# **Horizon 2020**

## **1. Past performance in Flanders**

# A. Importance of Horizon 2020 for Flanders (1)

## ▶ 7KP (2007-2013)

→ 2.884 participations from Flanders

→ 2.232 projects

→ 1.125 million euro to Flanders

## ▶ 8KP (= Horizon 2020: 2014-okt 2017)

→ 1.660 participations

→ 1.241 projects

→ 750 million euro to Flanders



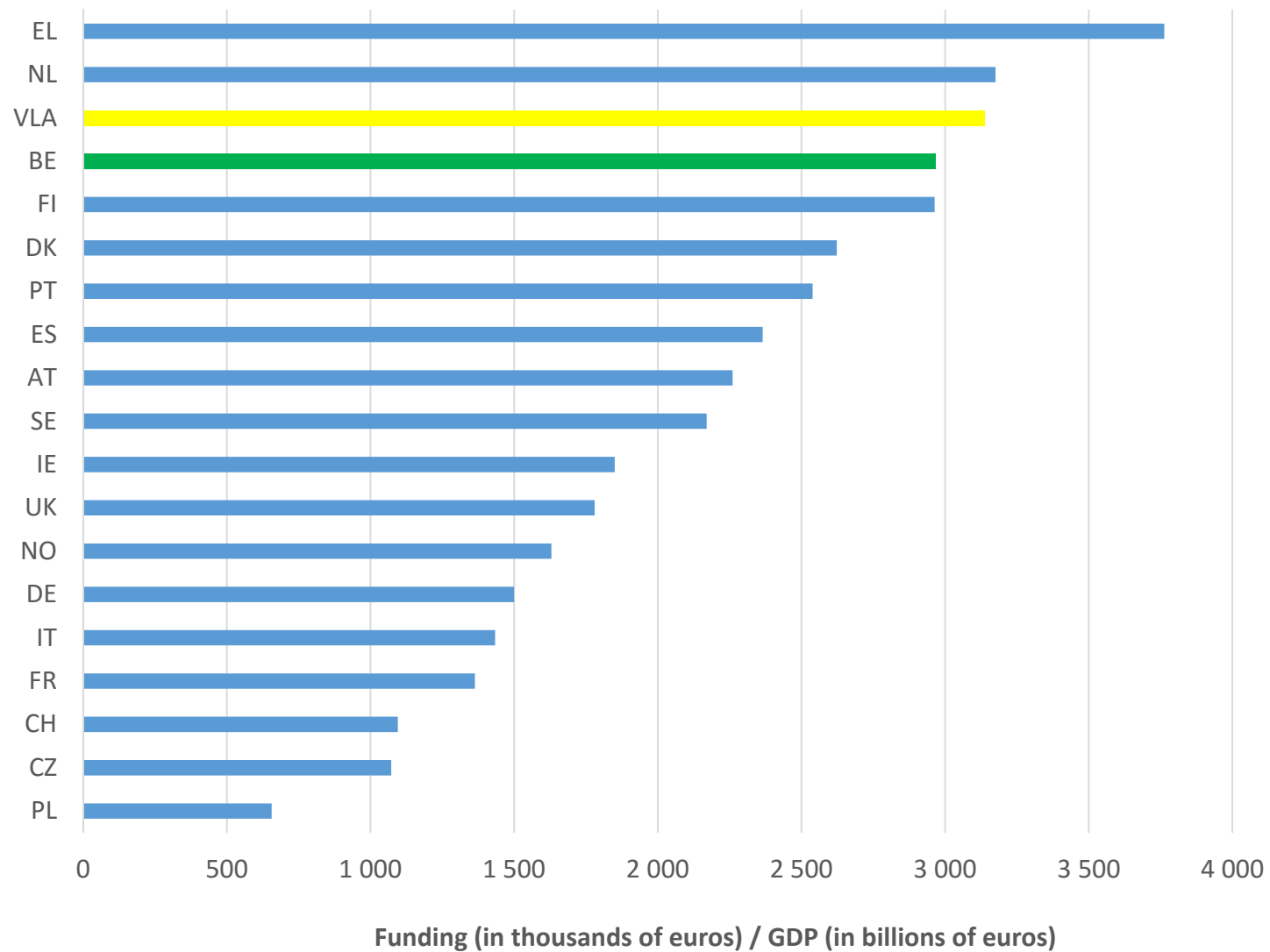
## **A. Importance of Horizon 2020 for Flanders (2)**

- ▶ Total R&D budget 2017 from Flemish government = 1.565 million euro**
- ▶ So 160 million euro means ... 10% extra budget from the European level!**

## **B. Methodology**

- ▶ **Database E.C. via platform E-CORDA**
- ▶ **Preliminary status on October 2017**
- ▶ **39% of total available budget has been allocated**

# Benchmark of Flanders in Europe



# Flemish participation in specific programmes of H2020

- ▶ **Flanders is participating very well in terms of financial return in the programmes:**
  - Information and communication technologies (4.3%)
  - Advanced Materials (4.0%)
  - Biotechnology (3.9%)
  - Marie Skłodowska-Curie Actions (3.1%)
  - Food security, sustainable agriculture and forestry, marine and maritime and inland water research (2.9%)
  - Develop the governance for the advancement of responsible research and innovation (2.9%)



▶ **In following programmes Flanders participates as expected (> 2.0%) in terms of financial return:**

- Twinning of research institutions (2.7%)
- Secure, clean and efficient energy (2.5%)
- European Research Council (2.4%)
- Advanced Manufacturing and processing (2.3%)
- Health, demographic change and wellbeing (2.3%)
- Climate action, environment, resource efficiency and raw materials (2.3%)
- Space (2.2%)
- Innovation in SMEs (2.2%)
- Smart, green and integrated transport (2.1%)

▶ **Flanders is participating below expectation (< or = 2.0%) in the programmes:**

- Nanotechnologies, Advanced Materials and production (1.8%)
- Future and Emerging Technologies (1.7%)
- Secure societies - Protecting freedom and security of Europe and its citizens (1.2%)
- Make scientific and technological careers attractive for young people (0.9%)
- Integrate society in science and innovation (0.8%)
- Teaming of excellent research institutions and low performing RDI regions (0.2%)

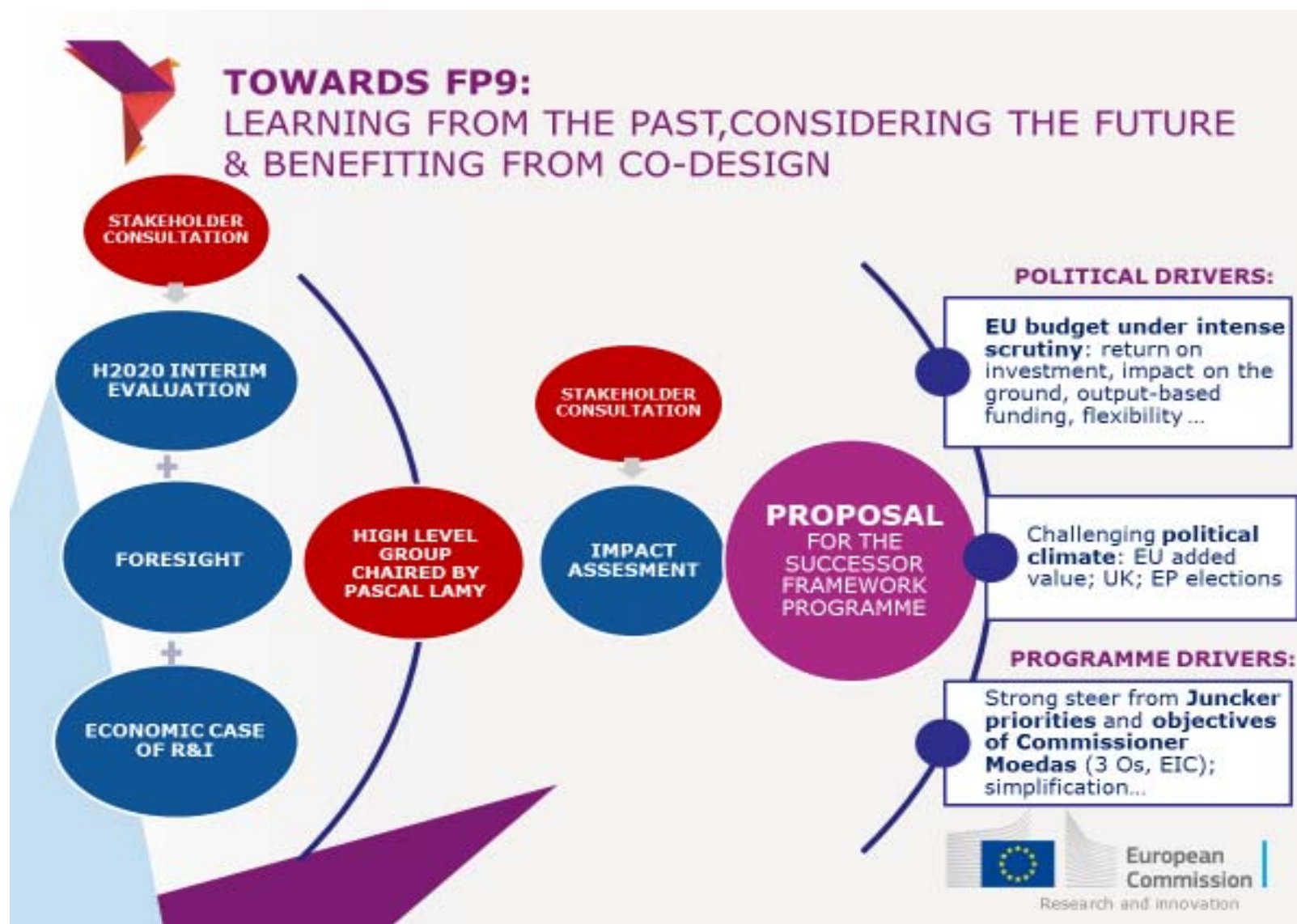
# Top 10 in Flanders

PARTICIPANT	NUMBER OF PARTICIPATIONS	FUNDING (in euros)
Katholieke Universiteit Leuven (KU Leuven)	268	144,275,725
Interuniversitair Mikro-Electronica Centrum VZW (IMEC)	127	121,169,207
Universiteit Gent (Ugent)	150	84,247,472
Vlaamse Instelling voor Technologisch Onderzoek (VITO)	68	39,254,975
Vlaams Interuniversitair Instituut voor Biotechnologie (VIB)	54	38,421,904
Vrije Universiteit Brussel (VUB)	71	36,728,414
Universiteit Antwerpen (UA)	72	30,697,608
Studiecentrum voor Kernenergie (SCK)	28	15,078,762
BIO BASE EUROPE PILOT PLANT VZW	17	10,327,846
Fonds voor wetenschappelijk onderzoek Vlaanderen (FWO)	18	8,982,255

# **Horizon 2020**

## **2. Interim evaluation**

# The process towards FP9



# The interim evaluation of Horizon 2020 (1)



#1

The first **integrated programme**, covering both basic research and close-to-market innovation.

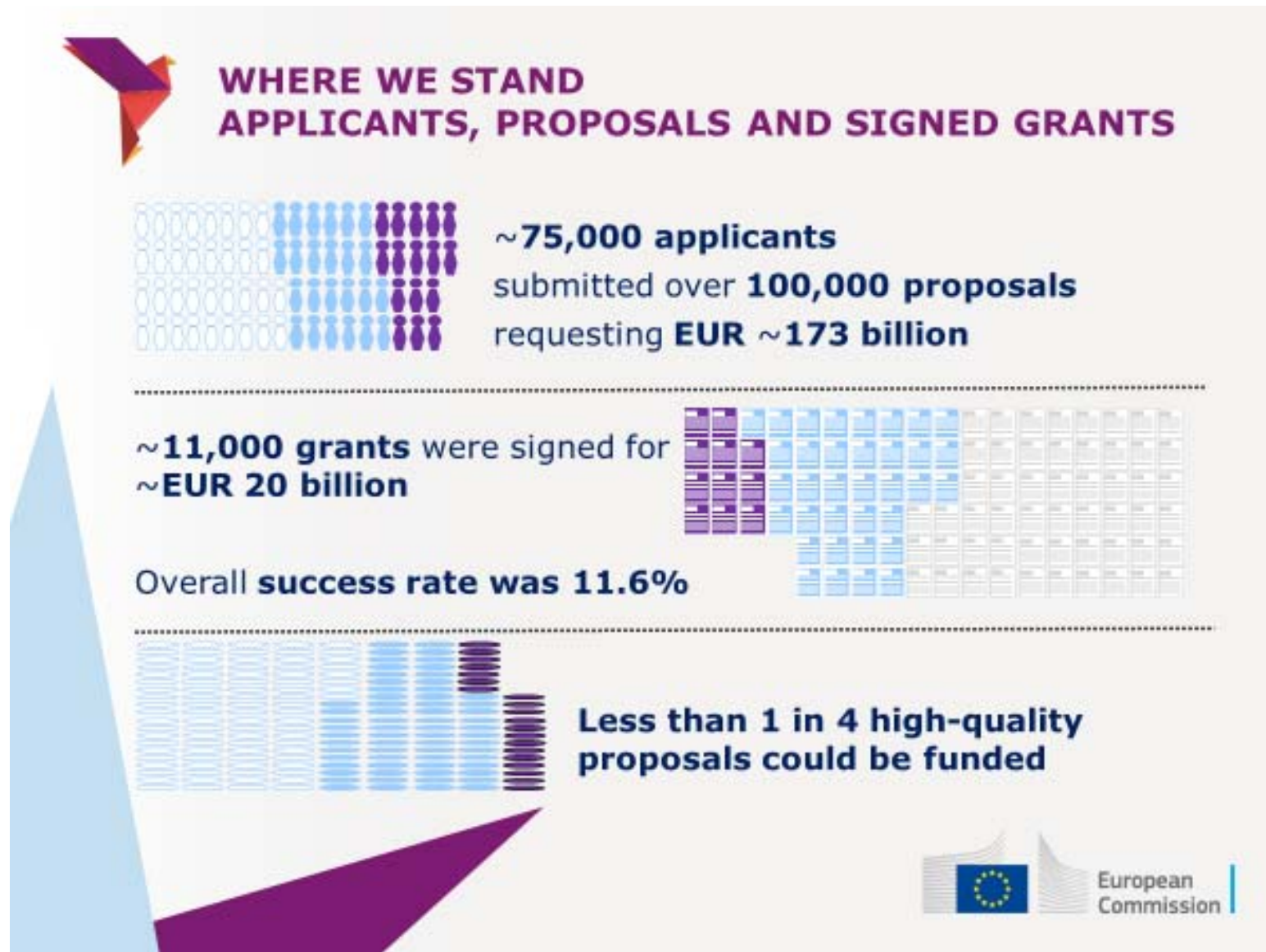


Total budget of ~ **EUR 77 billion**. Less than 10% of public R&D spending in the EU.



A **3 pillar approach** with one general objective: *"To contribute to building a society and economy based on knowledge and innovation across the Union."*

# The interim evaluation of Horizon 2020 (2)



# The interim evaluation of Horizon 2020 (3)



## KEY FINDINGS RELEVANCE



### ITS INITIAL OBJECTIVES ARE STILL FULLY VALID

- the EU still underinvests in R&I activities
- the identified Societal Challenges are still present



### IS ATTRACTIVE TO STAKEHOLDERS

- ~33,000 applications per year (vs. 20,000 in FP7)



### HAS PROVEN FAIRLY FLEXIBLE

- to emerging needs and political priorities (e.g. emergency Ebola call, more funds to deal with migration)





# The interim evaluation of Horizon 2020 (4)



# The interim evaluation of Horizon 2020 (5)



## KEY FINDINGS EFFICIENCY



### ON TRACK TO BE MORE EFFICIENT THAN FP7

- Administrative expenditure below the 5% legal target
- Time-to-grant 110 days faster than FP7



### NETWORKS A WIDE RANGE OF STAKEHOLDERS

- Participants from over 130 countries
- 52% of participants are **newcomers**; more of them come from EU-13 (31.2%) than EU-15 (19.7%)

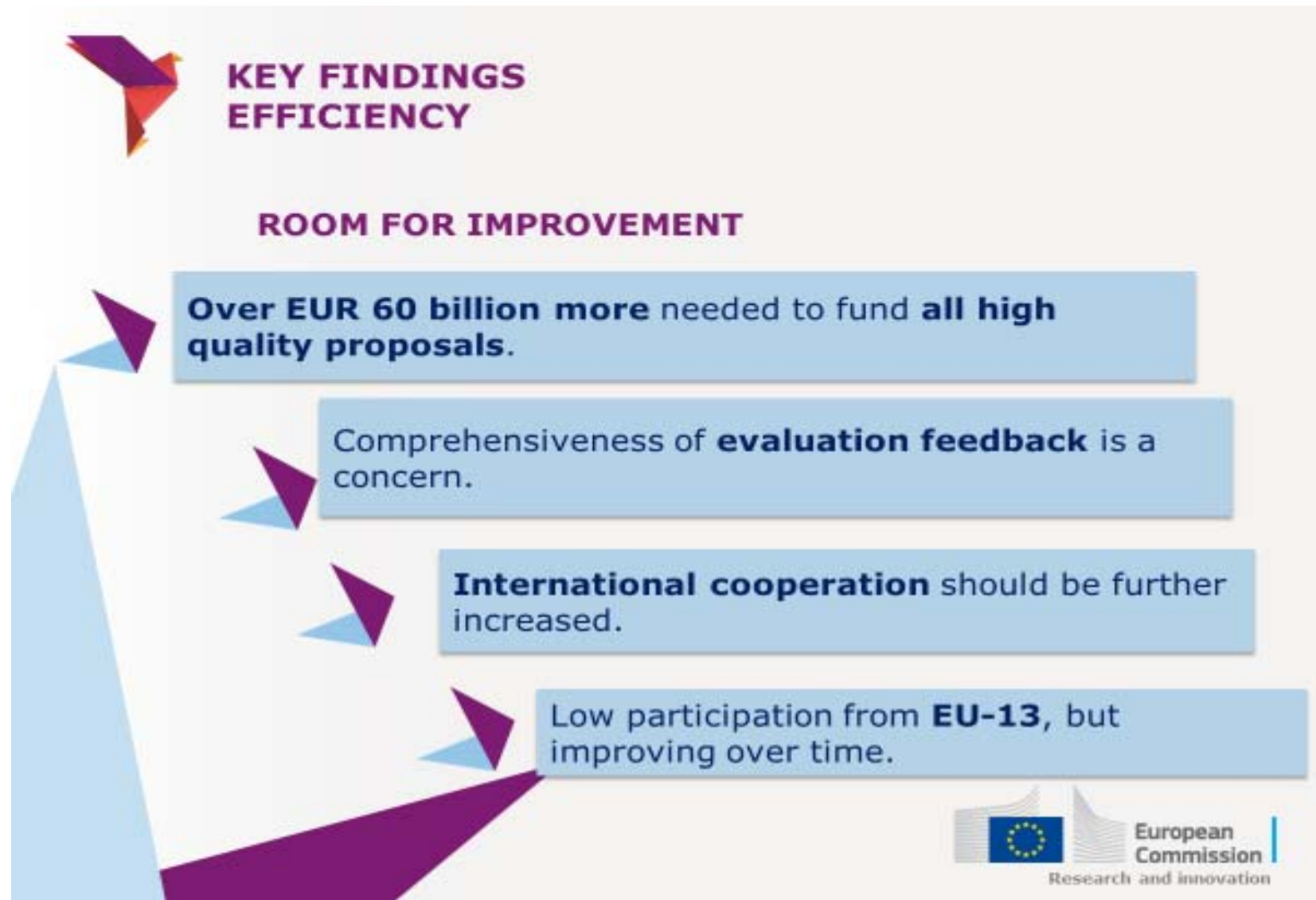


### LARGE-SCALE OVERSUBSCRIPTION

- Success rate only 11.6% (vs. 18.4% in FP7)
- ~EUR 1.7 billion spent to write unsuccessful proposals



# The interim evaluation of Horizon 2020 (6)



# The interim evaluation of Horizon 2020 (7)



## KEY FINDINGS EFFECTIVENESS - SCIENTIFIC IMPACT

### INVOLVING AND TRAINING THE BEST



- Attracting **EU's and world's best institutions** & researchers
- ~340,000 researchers supported
- International mobility for 27,000 researchers (MSCA)

### GENERATING SCIENTIFIC BREAKTHROUGHS



- ~4,000 peer-reviewed publications (2/3 in Open Access), **cited more than 2x world average**
- 17 Nobel Prize winners supported;
- 71% of ERC projects made scientific breakthroughs



### BUILDING COLLABORATION NETWORKS

- 1 in 5 publications from collaboration **academia-private sector**
- More **interdisciplinary publications** than in FP7 (7.5%)



# The interim evaluation of Horizon 2020 (8)



 **KEY FINDINGS**  
**EFFECTIVENESS - IMPACT**

**ROOM FOR IMPROVEMENT**

- Slow progress on **spreading excellence** in Europe.
- Make Horizon 2020 data and publications even more **openly accessible**.
- Support for **breakthrough, market-creating-innovation** can be strengthened.

  European Commission  
Research and innovation

# The interim evaluation of Horizon 2020 (9)



## KEY FINDINGS - COHERENCE



### INCREASED COHERENCE WITH OTHER INITIATIVES

- With **Structural Funds**: e.g. through the Seal of Excellence
- **Structuring effect**: e.g. through ERC quality label & Teaming for Excellence
- R&I: engine to implement the **Sustainable Development Goals**

RESEARCH AND INNOVATION

+

3-PILLAR STRUCTURE

+

CHALLENGE-BASED APPROACH

+

USE OF FOCUS AREAS

=

INCREASED COHERENCE INTERNALLY



# The interim evaluation of Horizon 2020 (10)



## KEY FINDINGS - COHERENCE

### ROOM FOR IMPROVEMENT

**R&I funding landscape** should be rationalised.

Internal coherence can be further improved, e.g. limit the **number of focus areas**.

**Synergies** with ESIF & other EU funding can be strengthened.



# The interim evaluation of Horizon 2020 (11)



## KEY FINDINGS – EU ADDED-VALUE



### SPEED, SCALE AND SCOPE

- Create excellence through **EU-wide competition**
- Improve **competitive advantage** of participants
- Critical mass to tackle **global challenges**
- Raise **EU attractiveness** as a place to carry out R&I



### COMPARED TO NAT. & REG. LEVEL, EU-FUNDED TEAMS

- Attract **2x more researchers** from other EU countries
- **Achieve results faster** in **45%** of projects
- Have **2x more collaborations**
  
- **83%** of projects **would not go ahead without EU funding!**
- **No evidence of substitution** effect (EU - national support)





# The interim evaluation of Horizon 2020 (12)



## KEY AREAS FOR IMPROVEMENT



### Underfunding

Has lower success rates than FP7, esp. for high quality proposals.



### Support for market-creating innovation

Demonstrates potential for breakthrough, market-creating innovation, but it should be strengthened substantially.



### Greater outreach to civil society

Should better explain the impacts of R&I, and involve even more the users & citizens in agenda-setting & implementation.



# **Horizon 2020**

## **3. Towards FP9**

# Towards FP9... Soete (1)



## TOWARDS FP9: FIRST CONCLUSIONS ON THE ECONOMIC CASE OF R&I

➤ Public R&I policy is **fully justified** by market failures, positive spill-overs and need to shape/create markets for innovation

➤ Its economic impacts are **large and significant**

➤ It needs to target **faster and more effective** the creation and diffusion of innovation

✓ **Report available:**

<http://bookshop.europa.eu/en/the-economic-rationale-for-public-r-i-funding-and-its-impact-pbK10117050/>



**Flanders**  
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# Towards FP9... Lamy (2)



## TOWARDS FP9: LAMY HIGH LEVEL GROUP

- ▶ Set up by Commission Decision in September 2016, in the context of the results of the Horizon 2020 interim evaluation, the Group's mandate was:
  - to formulate a vision for future EU research and innovation;
  - to draw strategic recommendations on maximising the impact of EU R&I programmes in the future, i.e. how to fulfil that vision.
- ▶ Wide range of European stakeholder organisations and EU institutional actors were consulted for feedback in key questions.
- ▶ Published on 3 July 2017 during 'R&I – Shaping our Future' conference in Brussels, the report '*LAB – FAB – APP: Investing in the European future we want*' with 11 recommendations and accompanying actions is available at:  
[https://ec.europa.eu/research/evaluations/index\\_en.cfm?pg=hlg](https://ec.europa.eu/research/evaluations/index_en.cfm?pg=hlg)
- ▶ Members of the HLG will act as ambassadors for the recommendations during the months ahead (a follow-up meeting is scheduled for January 2018).



# Towards FP9... Lamy (3)

## High Level Group - recommendations

1.	<b>Prioritise research and innovation in EU and national budgets</b> <u>Action:</u> double the budget of the post-2020 EU research and innovation programme
2.	<b>Build a true EU innovation policy that creates future markets</b> <u>Action:</u> 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.	<b>Educate for the future and invest in people who will make the change</b> <u>Action:</u> modernise, reward and resource the education and training of people for a creative and innovative Europe.
4.	<b>Design the EU R&amp;I programme for greater impact</b> <u>Action:</u> make the future programme's pillars driven by purpose and impact, fine-tune the proposal evaluation system and increase flexibility
5.	<b>Adopt a mission-oriented, impact-focused approach to address global challenges</b> <u>Action:</u> set research and innovation missions that address global challenges and mobilise researchers, innovators and other stakeholders to realise them.
6.	<b>Rationalise the EU funding landscape and achieve synergy with structural funds</b> <u>Action:</u> cut the number of R&I funding instruments, make those remaining reinforce each other and make synergy with other programmes work.



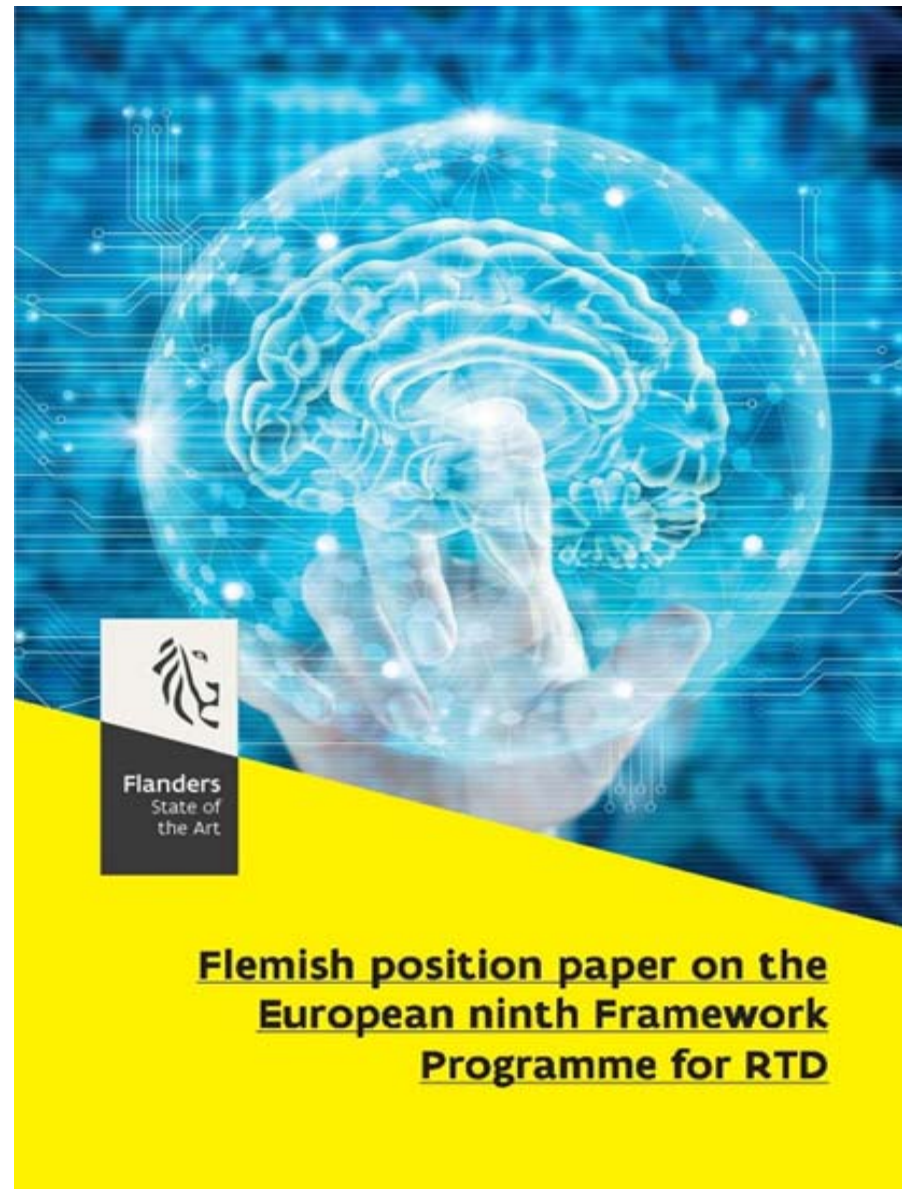
# Towards FP9... Lamy (4)

## High Level Group - recommendations

7.	<b>Simplify further</b> <u>Action:</u> become the most attractive R&I funder in the world, privileging impact over process
8.	<b>Mobilise and involve citizens</b> <u>Action:</u> stimulate co-design and co-creation through citizen involvement
9.	<b>Better align EU and national R&amp;I investment</b> <u>Action:</u> ensure EU and national alignment where it adds value to the EU's R&I ambitions and missions.
10.	<b>Make international R&amp;I cooperation a trademark of EU research and innovation</b> <u>Action:</u> 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.	<b>Capture and better communicate impact</b> <u>Action:</u> brand EU research and innovation and ensure wide communication of its results and impacts.



# Towards FP9... Spyns-stakeholders (5)



# Towards FP9... Spyns-stakeholders (6)

- ▶ **Excellence** should remain the main evaluation criterion
- ▶ The **entire innovation chain** should be addressed
- ▶ **Large scale infrastructures** should also be useful for innovation activities
- ▶ An appropriate proportion should be maintained between **top-level** programme strategies, "**bottom-up**" generation of fresh ideas and "solutions" to societal challenges
- ▶ **Simplification** and **rationalisation** should lead to a more inclusive funding landscape
- ▶ Next to open innovation in the more technology oriented spheres, societal innovation and **responsible research and innovation** should receive the appropriate attention
- ▶ FP9 must remain sufficiently attractive for applicants (both content-wise and in terms of the success rate) and **newcomers** (by lowering/removing barriers)



# Towards FP9... Spyns-stakeholders (7)

- ▶ Interaction and cooperation between **different disciplines and different types of actors**
- ▶ Better **connection** between various components, programme lines, funding instruments,...
- ▶ Project proposals addressing SOCIETAL CHALLENGES – **entire TRL** – dynamic way – successive calls
- ▶ Ample room for **small-scale and large-scale**, BU and TD collaborative research programmes
- ▶ **Coherence** between EU, national and regional science policy
- ▶ **SSH** must be an integral part of FP9 activities
- ▶ **Involve citizens** and civil society in the debate on S&T – improve innovative capacities and entrepreneurship
- ▶ **Mainstream RRI best practices** throughout FP9
- ▶ Different available funding sources (FP, ERDF and COSME) – **synergies** difficult to achieve because of different objectives, (management) rules
- ▶ **Excellent** projects and excellent applicant should receive funding

# Towards FP9... 'Friends of Excellence' (8)



The Hague,  
11/10/2017

Brussels,  
30/11/2017



# Towards FP9... time table (9)

<b>2017</b>	
<b>Jan</b>	• <b>Public stakeholder consultation for the interim evaluation (closed on 15 January)</b>
<b>29 May</b>	• <b>Publication of the Interim Evaluation (SWD)</b>
<b>June</b>	• <b>Assessment of Horizon 2020 for its interim evaluation and FP9 proposal (EP);</b> • <b>ERAC Opinion on the interim evaluation of H2020 and the next FP</b>
<b>July</b>	• <b>Lamy High Level Group report and stakeholder conference</b> • <b>Informal Competitiveness Council, Tallinn</b>
<b>Nov.- Dec.</b>	• <b>H2020 Work Programme 2018-20 integrating main findings from the Evaluation</b> • <b>Publication of Commission Communication on Interim Evaluation of Horizon 2020</b>
<b>2018</b>	
<b>~May</b>	• <b>Next MFF Commission proposal</b>
<b>~June</b>	• <b>Commission proposal tabled for the next Framework Programme &amp; accompanying Impact Assessment</b>
<b>2019</b>	
	• <b>European Parliament elections, appointment of the new Commission</b>
<b>2021</b>	
	• <b>Launch of the 9th Framework Programme</b>



## Science, Technology & Innovation in Flanders – 2017

>> [www.ewi-vlaanderen.be](http://www.ewi-vlaanderen.be)

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