



# INFRASTAR– Final Workshop

Brussels, 6 February 2020

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# Two kinds of obsolescences

*Obsolescence by design*

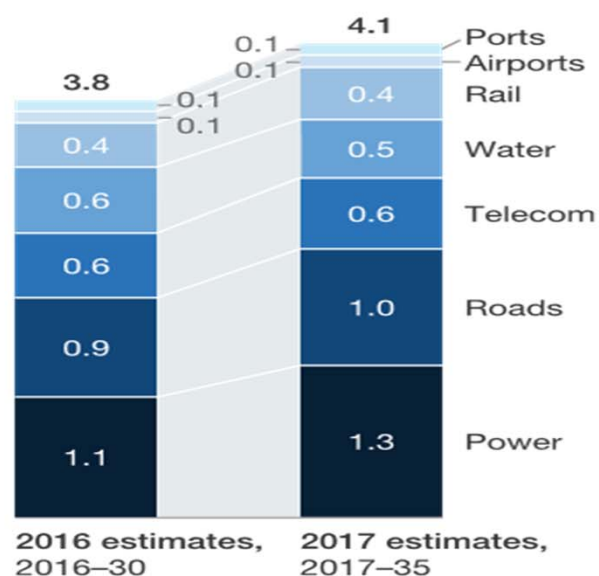
*Obsolescence by negligence*



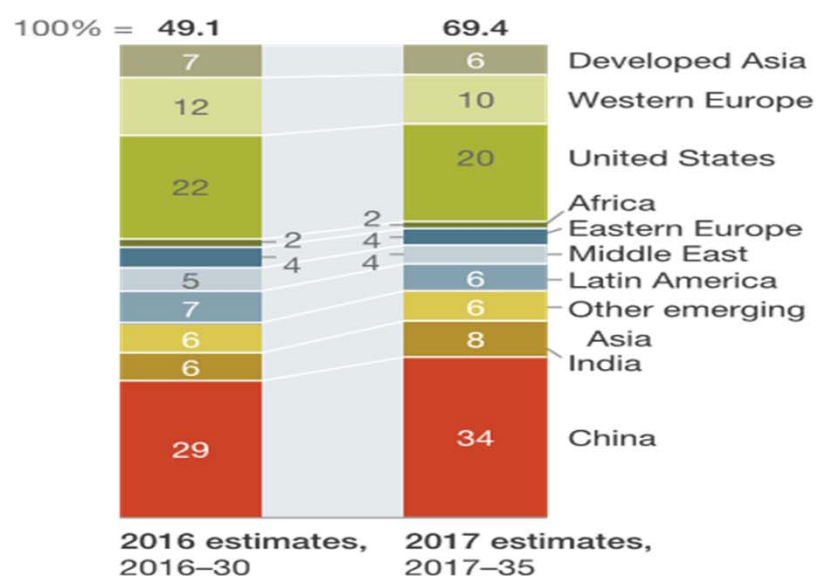
## Estimated overall infrastructure spend has risen since our 2016 estimate.

### Aggregate infrastructure spending<sup>1</sup>

By sector, % of GDP



By region, \$ trillion, constant dollars



Note: Figures may not sum, because of rounding.

<sup>1</sup>Projections now cover 19 years (2017–35) instead of 15 years (2016–30). We changed our projection period end from 2030, as used in our 2013 and 2016 reports, to 2035 to maintain a sufficiently long projection period; as a consequence, numbers are comparable to prior estimates only in percent of GDP terms. Data is based on latest infrastructure stock data of 2015 instead of 2012; base-year prices have been updated to 2017 instead of 2015; GDP-growth projections have increased, driving higher infrastructure needs; improved data and projections by external providers of water and telecom data.

Source: GWI; IHS Global Insight; ITF; national statistics; McKinsey Global Institute analysis



# MSCA Infrastar project: What is next for you?

- *To perform further research?*
- *To embrace an academic career?*
- *To find employment in industry?*
- *To create a start up?*





# Innovation: What is it?

The OECD *Oslo Manual* for measuring innovation defines four types of innovation: **product** innovation, **process** innovation, **marketing** innovation and **organisational** innovation.

**Product innovation:** A good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user friendliness or other functional characteristics.

**Process innovation:** A new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.

**Marketing innovation:** A new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.

**Organisational innovation:** A new organisational method in business practices, workplace organisation or external relations.

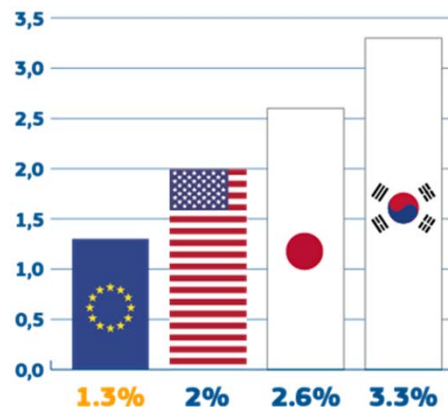
DG GROW: innovation = invention that is successfully commercialized and spread



## While benefiting from world-class research and strong industries...

Our knowledge and skills are our main resources.

- **7%** of the world's population
- **20%** of global R&D
- **1/3** of all high-quality scientific publications



**1.3%**  
EU business  
R&D  
investment

**...Europe can do better at transforming this into leadership in innovation and entrepreneurship**

# The contribution of the EU to R&I

2014-2020 (€ bn)		2021-2027* (€ bn)	
<b>Framework Programme</b>	<b>79,00</b>	<b>Framework Programme</b>	<b>100,00</b>
<i>EIT</i>	<i>2,40</i>	<i>EIT</i>	<i>3,00</i>
<i>SME-I, EIC pilot</i>	<i>4,30</i>	<i>EIC</i>	<i>10,00</i>
<b>Digital Europe</b>		<b>Digital Europe</b>	<b>9,20</b>
<b>EU Space Programmes</b>	<b>12,00</b>	<b>EU Space Programmes</b>	<b>16,00</b>
<b>EDIDP</b>	<b>0,50</b>	<b>EDF</b>	<b>13,00</b>
<b>ITER</b>	<b>3,00</b>	<b>ITER</b>	<b>6,10</b>
<b>CEF Telecom</b>	<b>1,05</b>	<b>Connecting Europe Facility Digital</b>	<b>3,00</b>
<b>JRC: home-made nuclear research funded under Euratom</b>	<b>0,65</b>	<b>JRC: home-made nuclear research funded under Euratom</b>	<b>0,70</b>
<b>TOTAL</b>	<b>96,2</b>		<b>138,9</b>
<b>Total per year</b>	<b>13,74</b>		<b>19,84</b>

\* Commission proposal of 26.06.2019

# Lessons Learned

## from Horizon 2020 Interim Evaluation



Support breakthrough innovation



Create more impact through mission-orientation and citizens' involvement



Strengthen international cooperation



Reinforce openness



Rationalise the funding landscape



Encourage participation



# Key Novelties

## in Horizon Europe

European Innovation Council

R&I Missions

Extended association possibilities

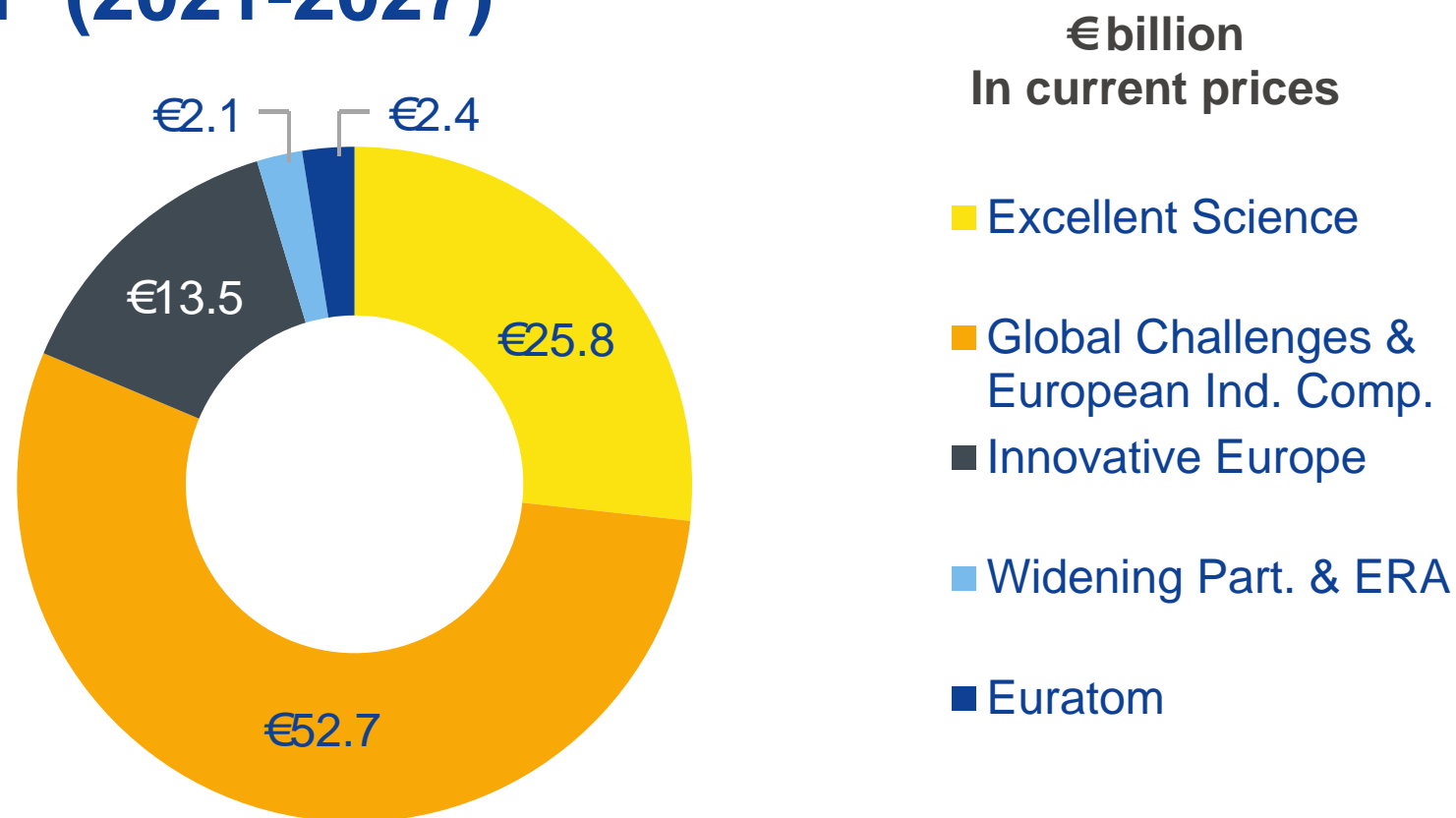
Open science policy

New approach to Partnerships

Spreading Excellence

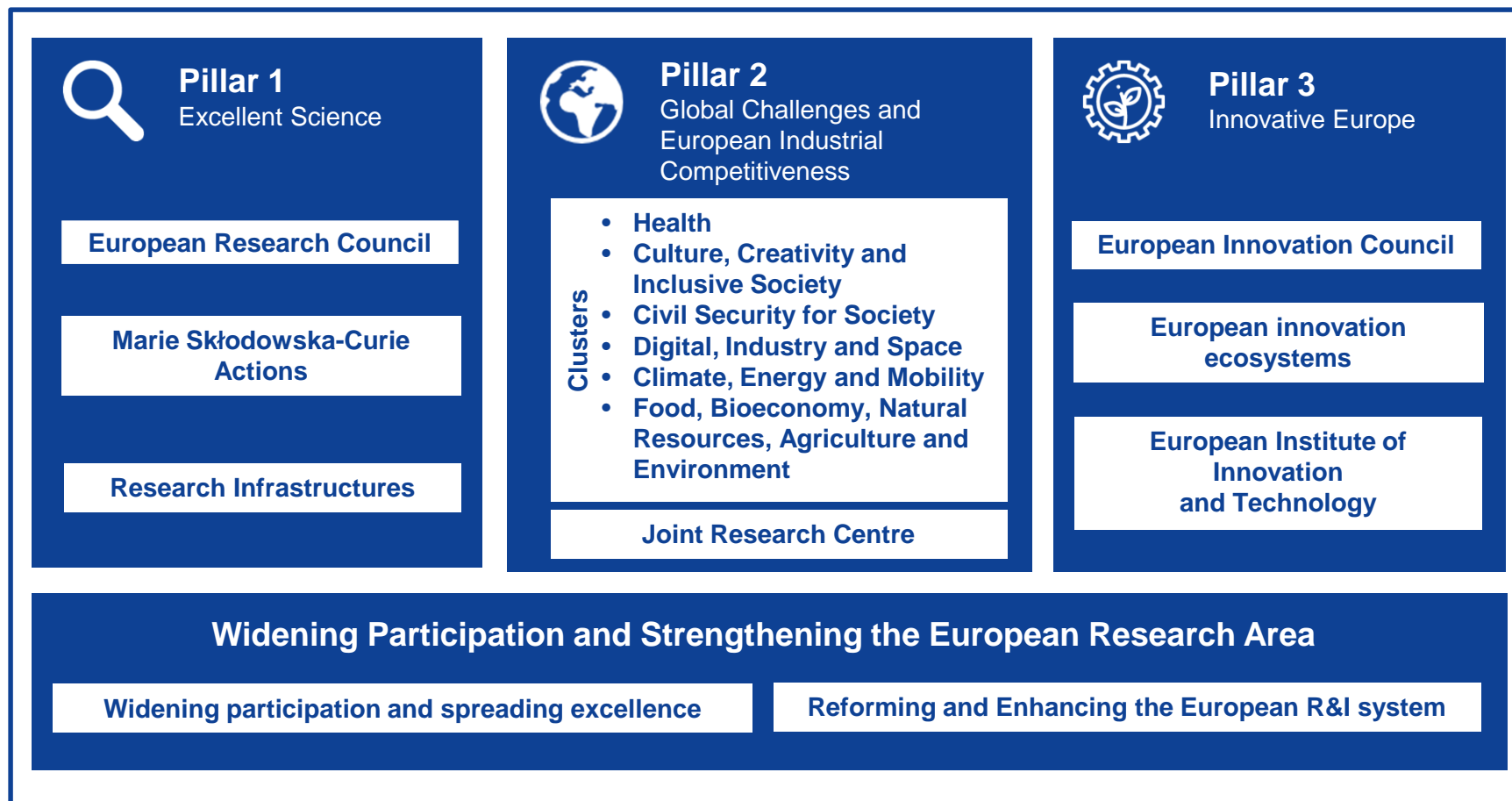


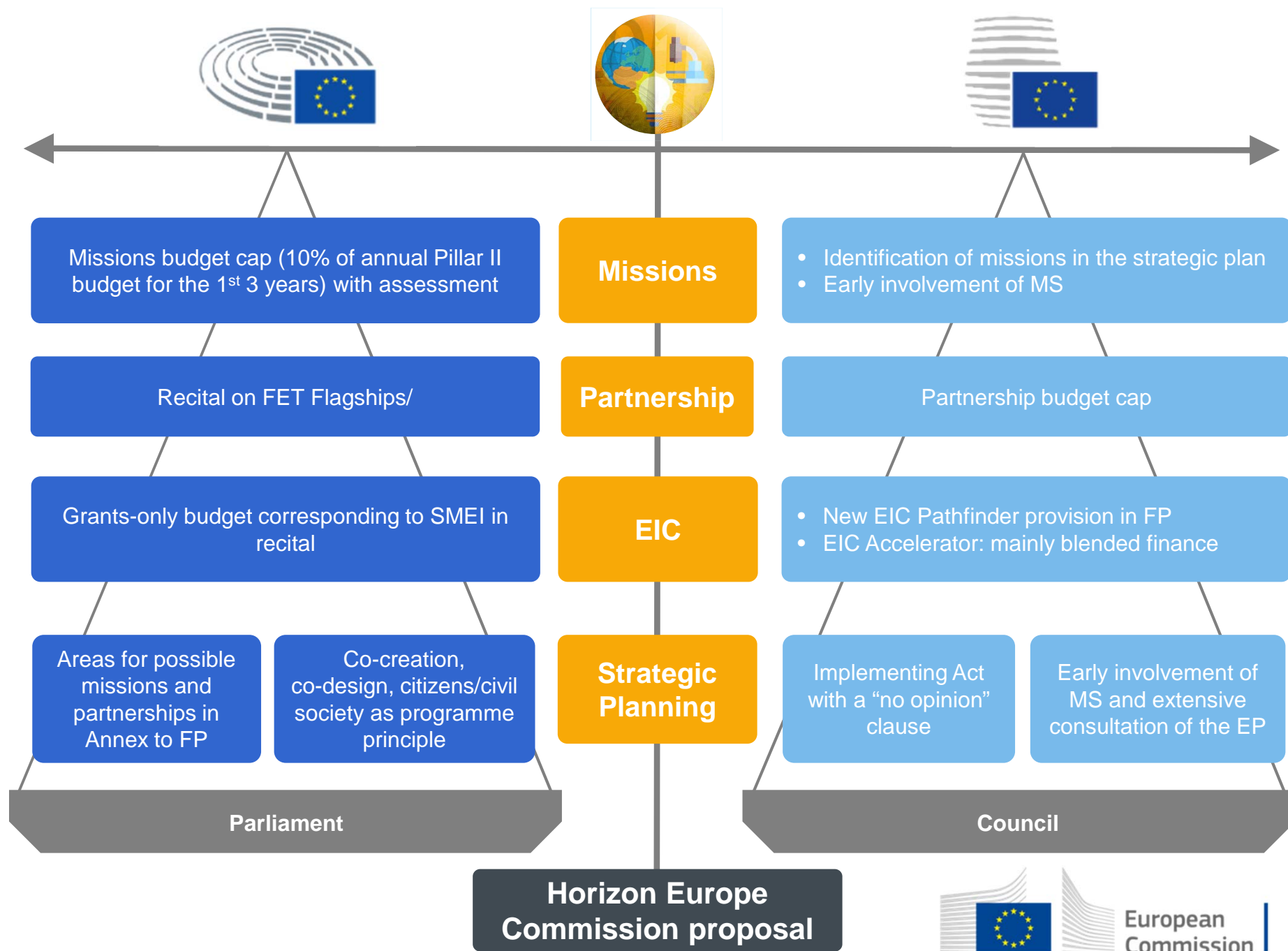
# Commission proposal for budget: €100 billion\* (2021-2027)



\* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.

# Horizon Europe: Preliminary structure







# European Innovation Council

Support to innovations with breakthrough and disruptive nature and scale up potential that are too risky for private investors (**70% of the budget earmarked for SMEs**)

**European  
Innovation Council  
– a one-stop-shop**

Helping innovators create markets of the future, leverage private finance, scale up their companies, Innovation centric, risk taking & agile, pro-active management and follow up

Two complementary instruments bridging the gap from idea to investable project

**Pathfinder: grants**  
(from early technology  
to pre- commercial)

**Accelerator:**  
**grants only & blended finance**  
(from pre-commercial  
to market & scale-up)

# Europe is making big progress in innovation/startups

Research and Innovation

5 years ago 2010-2014	VS	Now 2015-2019
22 \$1B+ VC-backed companies before 2015	 \$B+ COMPANIES	99 \$1B+ VC-backed companies now
3 countries attracting \$1b+ capital per year	 UNICORNTRIES	7 countries attracting \$1b+ capital per year
\$34B cum. 2010-2014	 CAPITAL INVESTED	\$113B cum. 2015-2019
9 mega rounds in 2014	 \$100M+ ROUNDS	40 mega rounds in 2019
10% of rounds in 2014	 % OF ROUNDS WITH 1+ US OR ASIAN INVESTOR	21% of rounds in 2019
76 2010-2014	 EXITS >\$100M	148 2015-2019
\$25B funds raised from LPs	 VC FUNDS RAISED	>\$50B funds raised from LPs
4.7m 4.1m for the United States	 PROFESSIONAL DEVELOPERS	6.1m 4.3m for the United States
7.2% of capital invested in 2014	 % CAPITAL INVESTED IN MIXED/WOMEN TEAM	8.4% of capital invested in 2019

# Talent (Competences) is the most important factor

Number of professional  
developers per 1,000 inhabitants

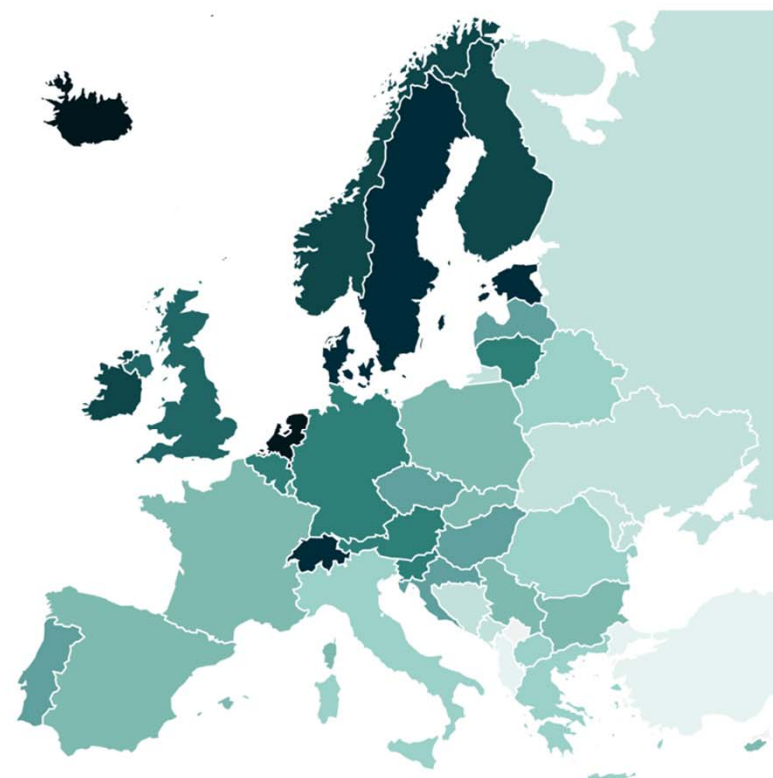
LEGEND

- up to 20
- 16 to 18
- 14 to 16
- 12 to 14
- 10 to 12
- 8 to 10
- 6 to 8
- 4 to 6
- 2 to 4
- up to 2

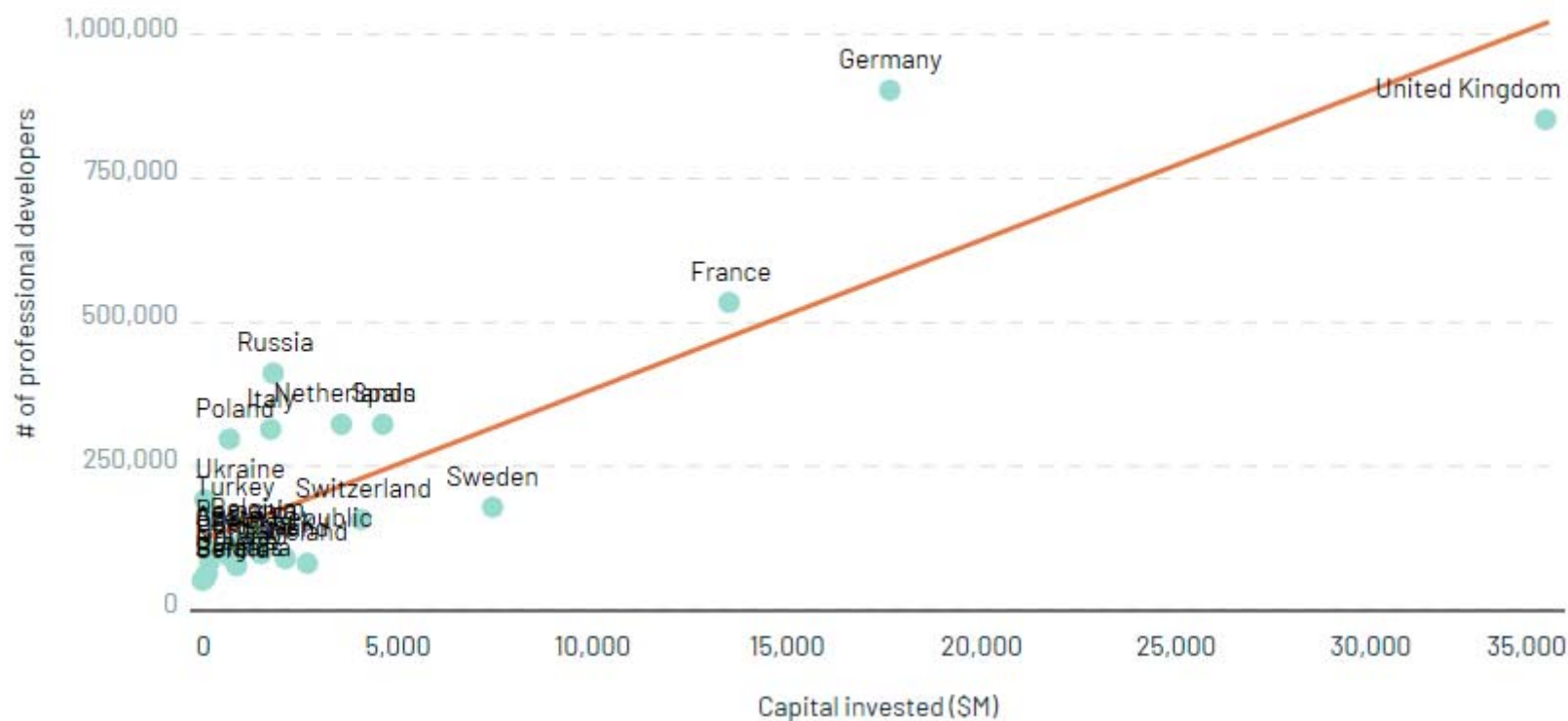
NOTE:

Calculated based on the total number of professional developers in the country in 2019 divided by the total population. World population figures taken from World Development Indicators using 2018 world population data.

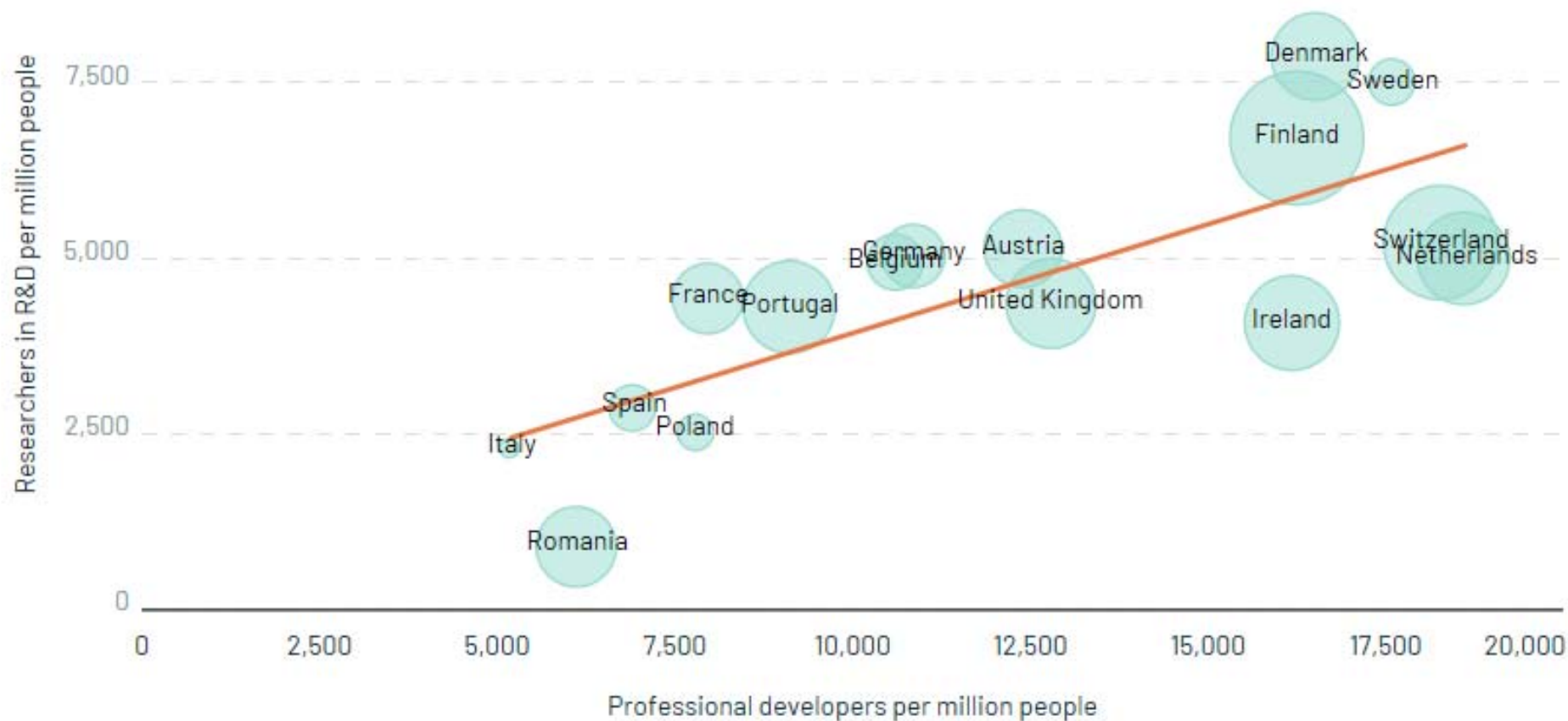
Source:  stackoverflow



# Talent is the key. Developers attract capital (not the other way round)



# Researchers are the key for having developers







# The role of DG GROW in Innovation and Industrial Policy

**EU Start Ups & Scale Ups Initiative:  
COM(2016)733**

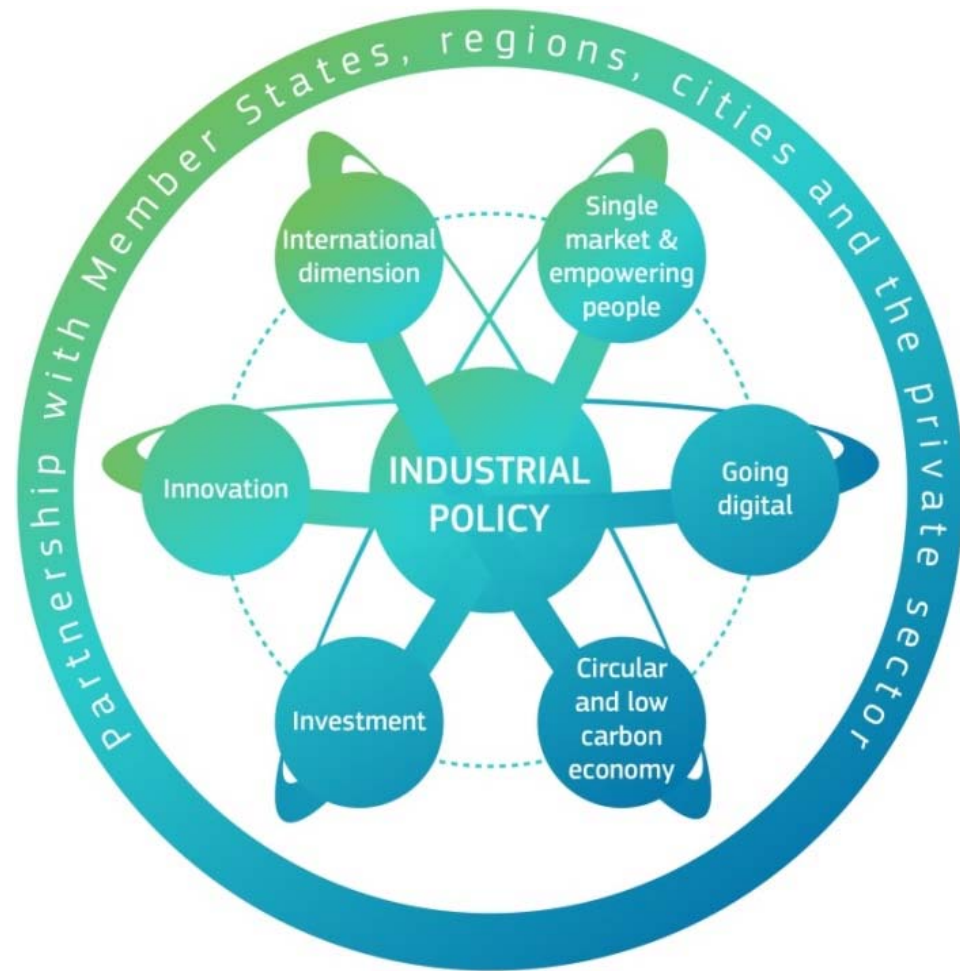
**EU Industrial Policy: COM(2017)479**

**Vision 2030 for the European industry**

**Strategic Value Chains: Important Projects of  
Common European Interest**

**Smart Specialisation Strategy platform:  
Industrial modernisation**

Making  
Europe's  
industry  
stronger and  
more  
innovative: Key  
initiatives of  
industrial policy  
strategy



## What are Strategic Value Chains (SVC)?

- Areas of systemic importance and strategic European interest for **growth, jobs, competitiveness and technological autonomy**
- Crucial in fostering the transformation of European industry through **technology, innovation and sustainability**
- Characterised along the following three-axis:
  - technological **innovativeness**
  - economic and **market potential**
  - societal and **political importance** for Europe
- Networks of interdependent and interlinked economic actors creating **future added value around a product, process or service** and operating in a strategic network across firms of different sizes, including SMEs, sectors and borders

# Strategic Value Chains

IPCEIs approved		Date app. € bn	MS concerned
Microelectronics	18-12-2018	1,75	UK+IT+FR+DE
Batteries	09-12-2019	3,2	FR+IT+BE+FI+SW+DE+PO
IPCEIs to be approved soon		Date app. € bn	MS concerned
High-performance computing			FR+IT+SP+LU
Hydrogen energy technologies and systems			
Batteries II			
possible IPCEIs in the future		Date app. € bn	MS concerned
Connected, clean and automated vehicles			
Low-carbon industry			
Smart Health			
Industrial Internet of Things			
Cybersecurity			

# Thank you for attention!



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