

EU Support to Innovation and Nanotechnologies

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R&I addressing global challenges



Research and innovation is key to address effectively the **pan European social challenges**:

- protecting citizens, democracy and freedom
- building a more sustainable and inclusive future



Research and innovation is the main driver for economic growth

The Commission has proposed a **€ 100 billion** research and innovation funding programme for seven years (2021-2027)



'With growing international competition, Europe needs to act urgently on research and innovation.

The proposed € 100 billion for the next EU research and innovation programme would be a huge boost.'

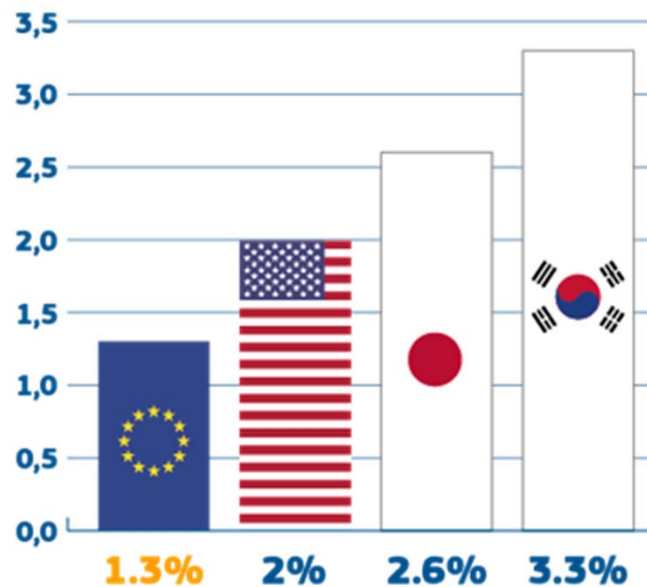
Carlos Moedas, Commissioner, 15/05/2018



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

Our knowledge and skills are our main resources.

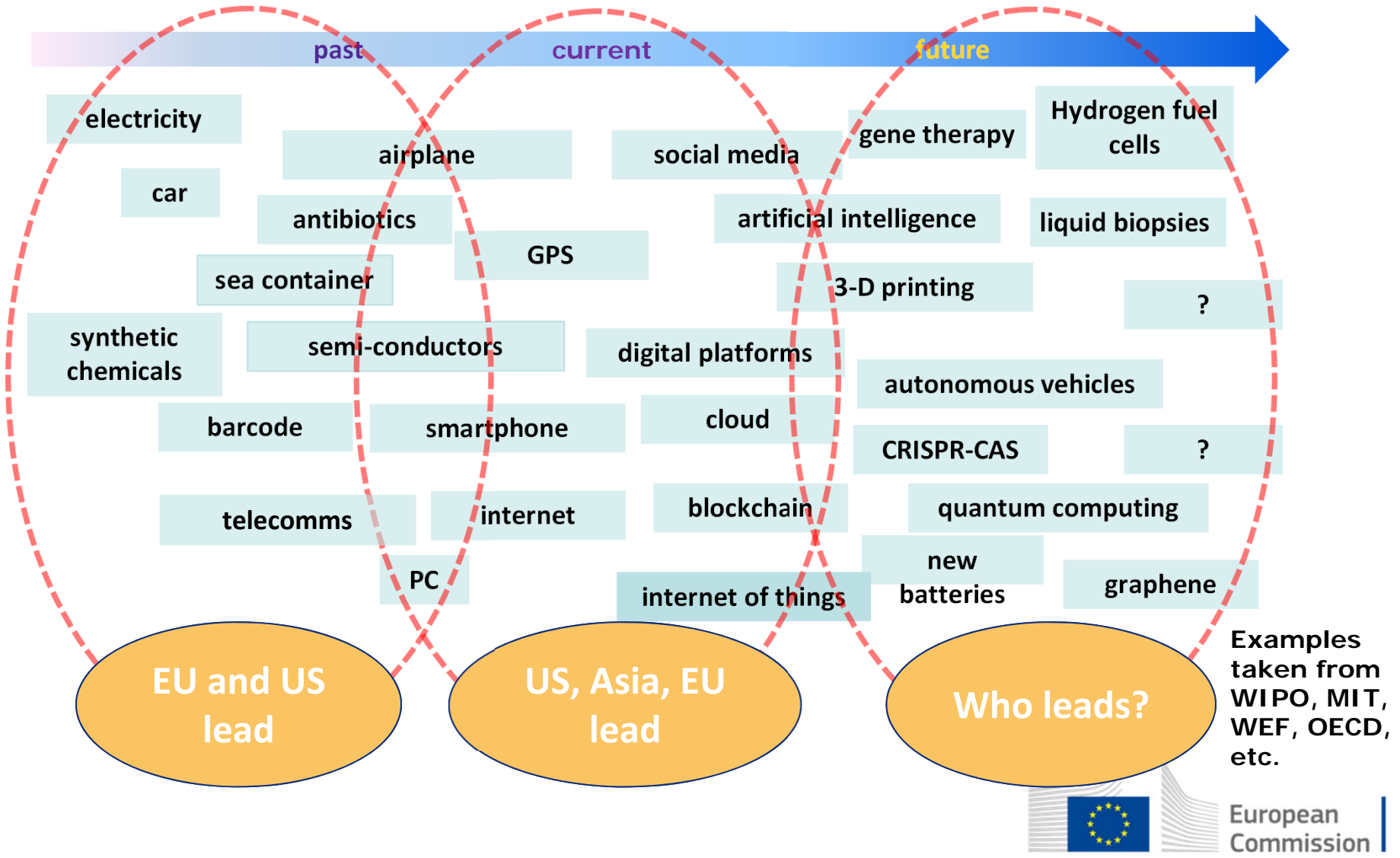
- 7% of the world's population
- 20% of global R&D
- 1/3 of all high-quality scientific publications



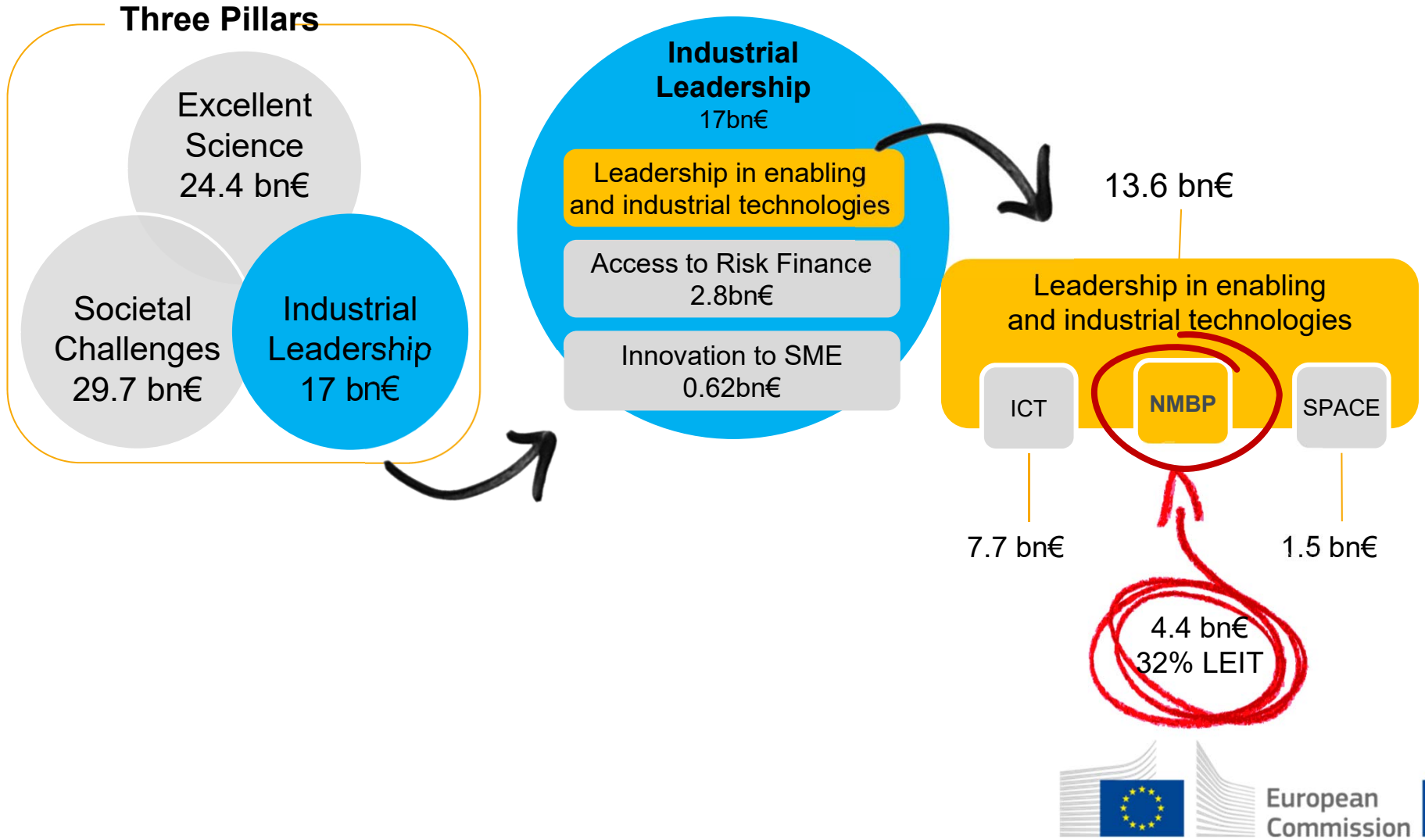
...Europe fails to transform leadership in science into leadership in innovation and entrepreneurship

1.3%
EU business
R&D investment

Who will lead the next wave of breakthrough and disruptive innovation?



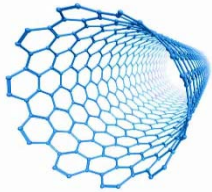
Investment channels in Horizon 2020



EU investments so far

€ 1.8 billion in FP7

€ 1.4 billion in Horizon 2020 + € 0.5 billion until 2020



Fields of application

Nanomaterials

- Health (medical devices)
- Food (packaging, food additives)
- Textile (materials, antimicrobial)
- Cosmetics
- Environment (water, soil)
- Transport (light, self-healing)
- Electronics
- Construction (coatings)



Cross-cutting issues

Societal acceptance

- **Risk governance**
 - Nanodefiniton
 - EU-OECD: Testing guidelines
 - Standardization
 - EU Observatory on nanomaterials
 - Risk governance Council (coming soon)
- **Safe by Design**
 - Nanosafety Cluster

Future research routes

Safe by design: Risk assessment in early stage of product development

**Reduce time
required for R&D**



**More cost effective
innovation**



Faster to market



**Prepare for future
regulatory challenges**



Safer products



**Better consumer
acceptance**



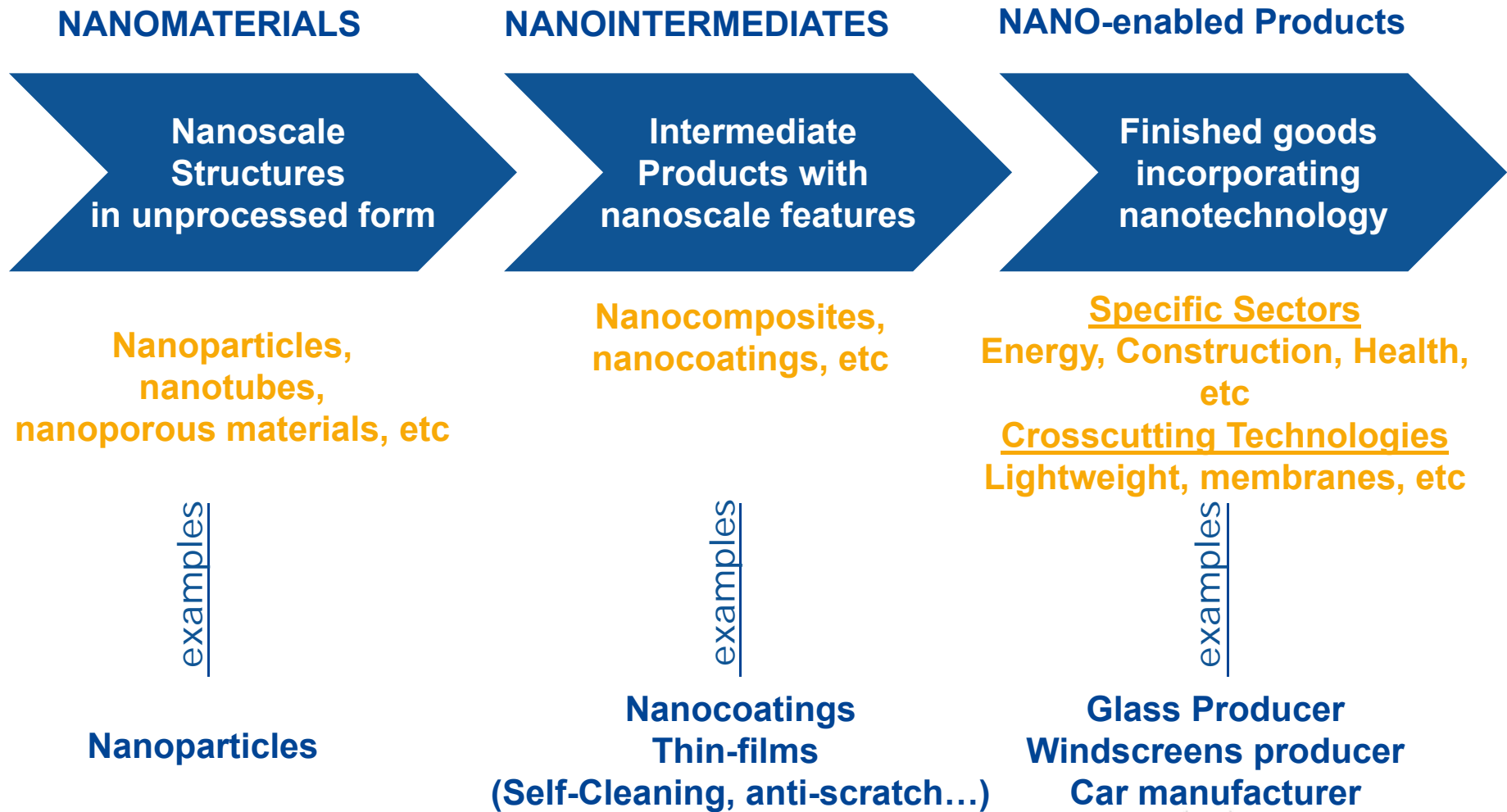
Current open calls in Horizon 2020:

2019: from science to regulation: metrics and main sectors

2020: from science to regulation: behaviour of multi-component nanomaterials

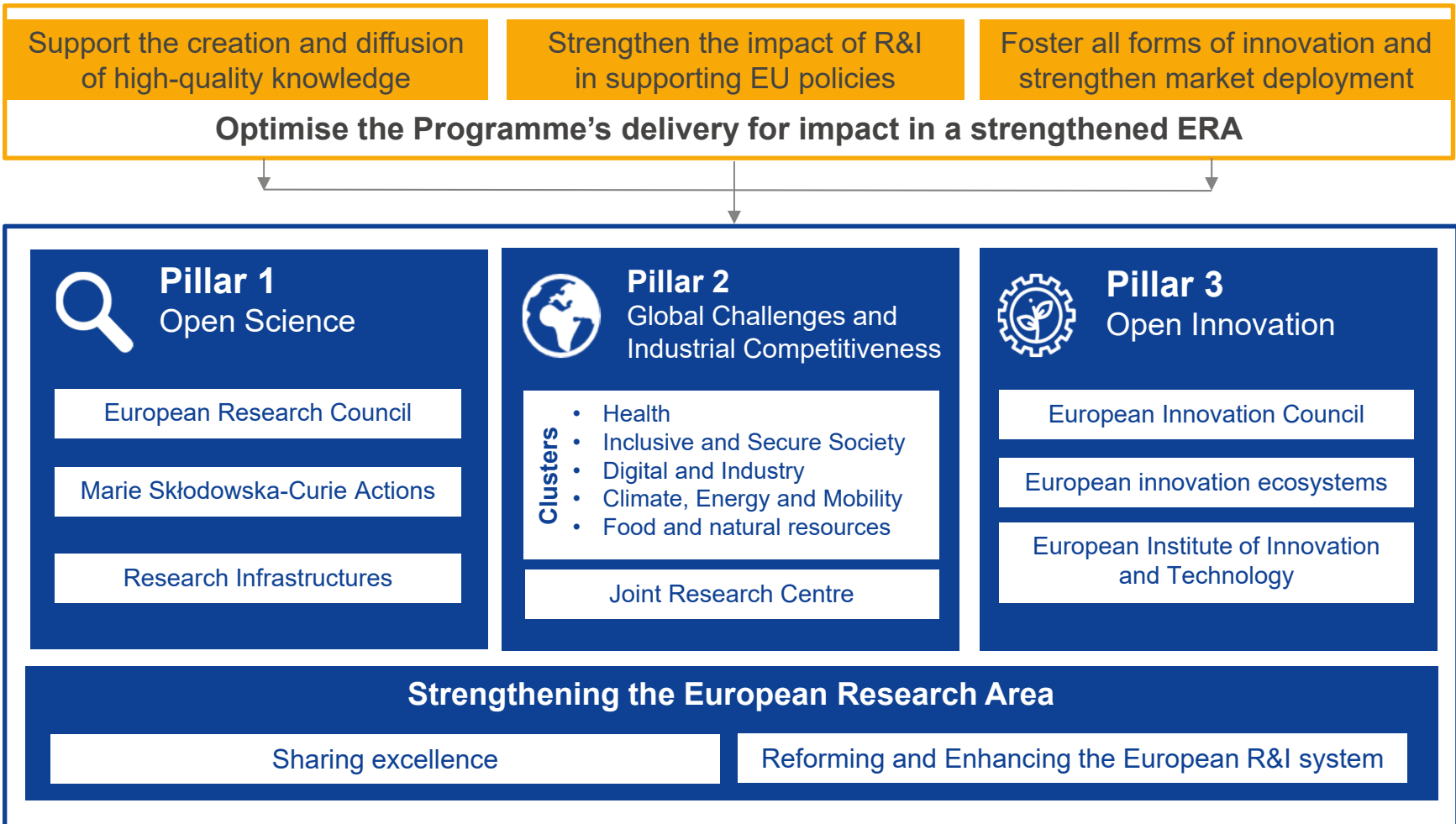
2020: Regulatory science for medical technology products

Translation to products



Horizon Europe: evolution not revolution

Specific objectives of the Programme





European Innovation Council

The EIC will support innovations with breakthrough and disruptive nature and scale up potential that are too risky for private investors.

**European
Innovation
Council**

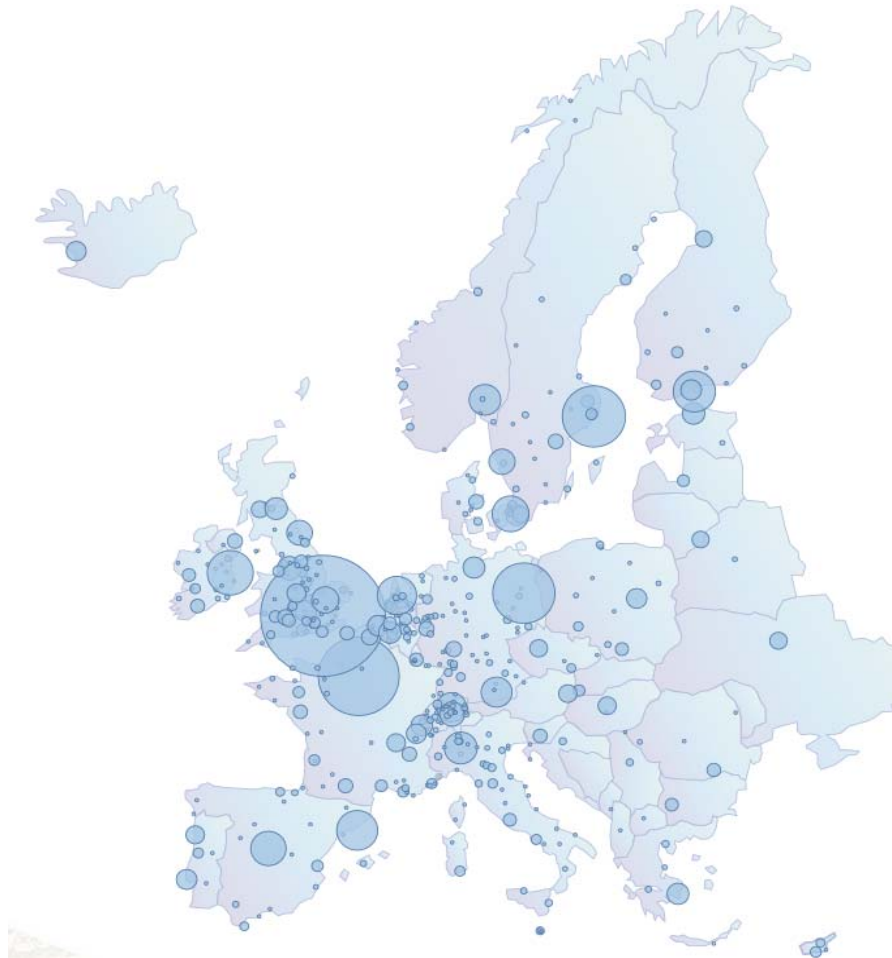
**Helping innovators create markets of the future,
leverage private finance, scale up their
companies,
Innovation centric, risk taking & agile, pro-
active management and follow up**

Two complementary instruments bridging the gap from idea to investable project

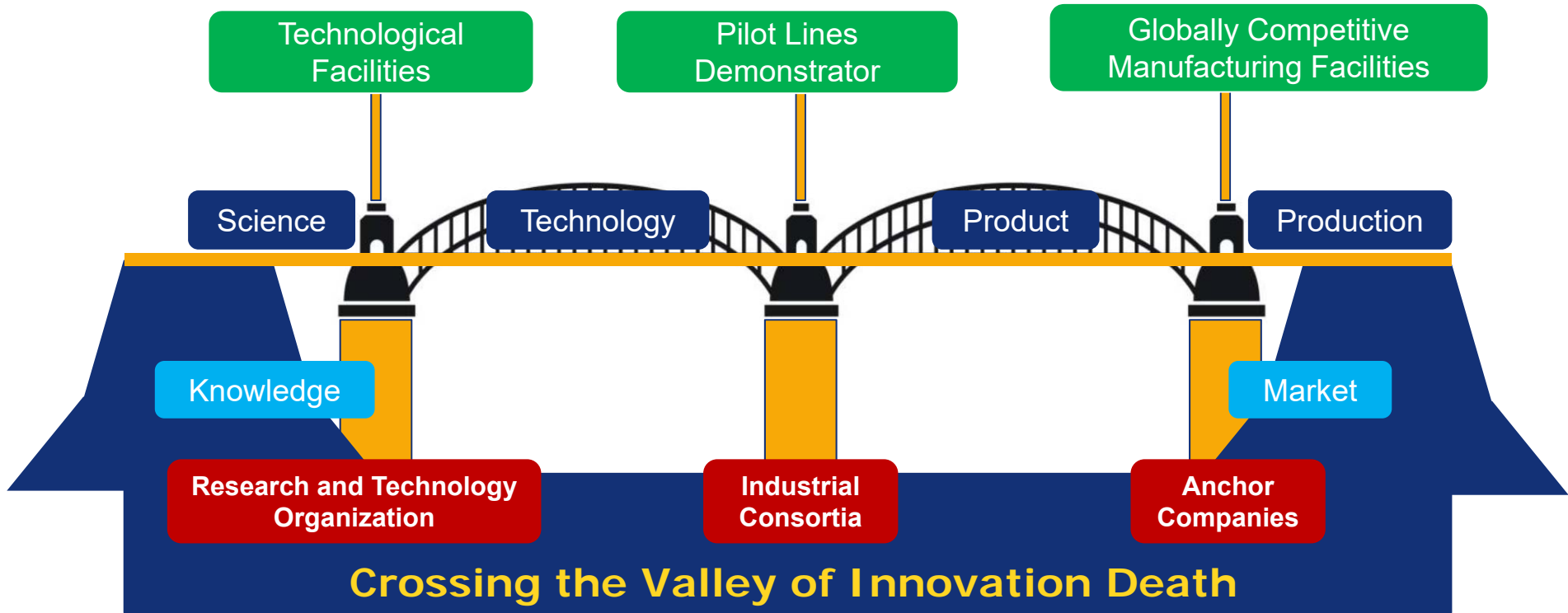
Pathfinder: grants
(from early technology
to pre- commercial)

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

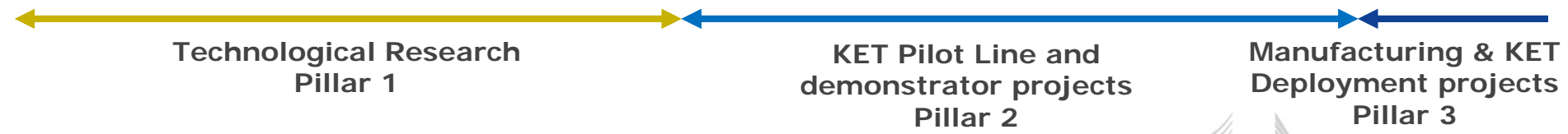
European tech ecosystems are rich but can only reach their full potential if better interconnected



Map of the 476 European cities with at least one scale-up company, Startup Europe "Startup City Hubs in Europe" 2018 report



TRL 1	2	3	4	5	6	7	8	9
Basic Principles Observed	Technology Concept Formulated	Experim. Proof of Concept	Technology Validation in Lab	Tech Valid in Relevant Environ't	Demo in Relevant Environ't	Demo in Operational Environ't	System Complete and Qualified	Successful Mission Operations



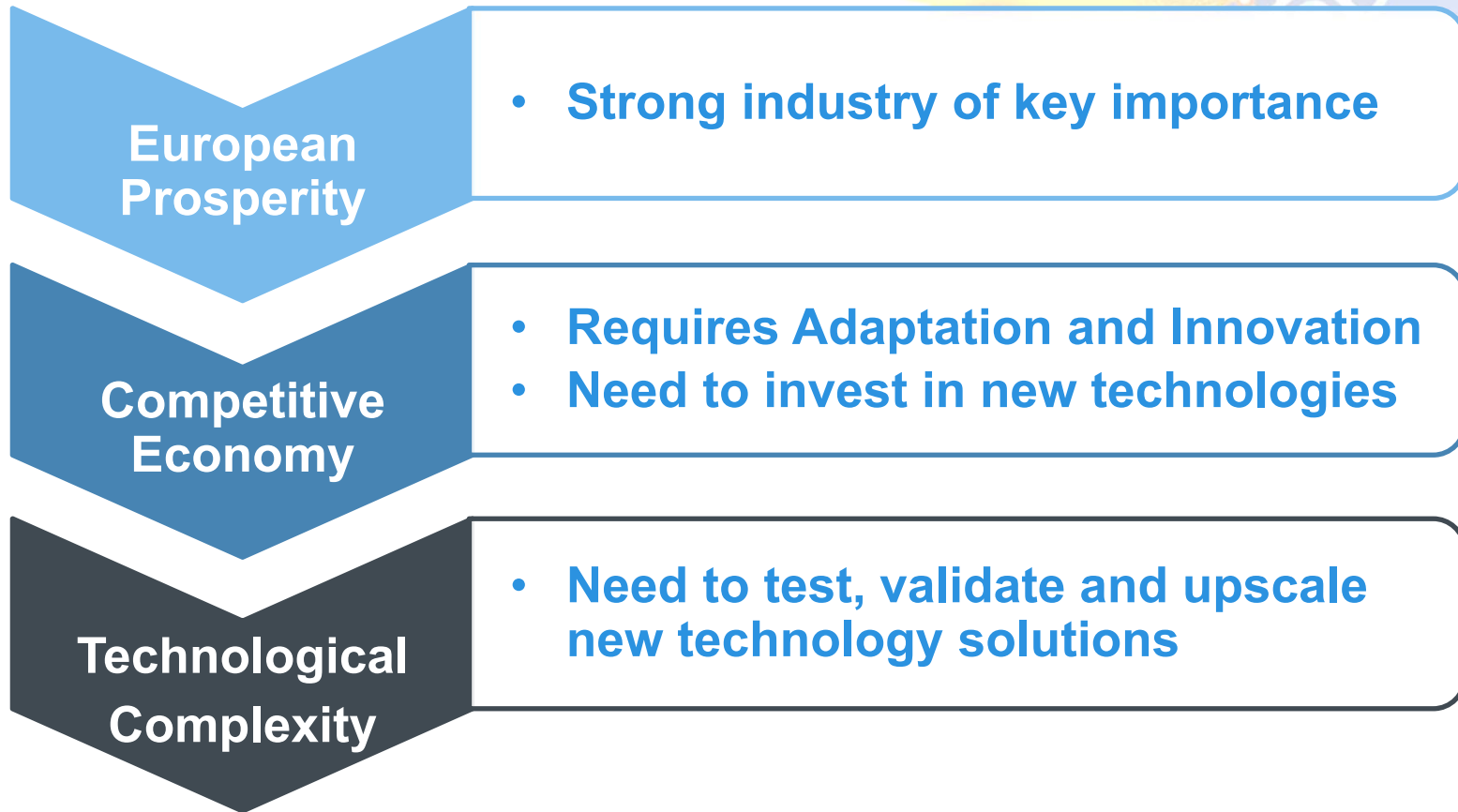
Technology Infrastructures

Facilities, equipment, capabilities and support services required to **develop, test and upscale technology to higher TRLs** whilst ensuring feasibility and regulatory compliance.

Public, semi-public or private status. Users are mainly industrial players, including SMEs, **seeking** to develop innovative technologies **towards commercialisation of new products**, processes and services.



Importance of Technology Infrastructures



Publication of Staff Working Document on Technology Infrastructures

- April 2019

<https://publications.europa.eu/en/publication-detail/-/publication/0df85f8b-7b72-11e9-9f05-01aa75ed71a1/language-en>



CO-CREATION STARTS IN JUNE 2019!
Public consultations and input for strategic programming for Horizon Europe



Latest information on consultation and next framework programme:

https://ec.europa.eu/info/designing-next-research-and-innovation-framework-programme/what-shapes-next-framework-programme_en#latest



Thank you!

#HorizonEU

<http://ec.europa.eu/horizon-europe>

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Horizon Europe dedicated website

<http://ec.europa.eu/horizon-europe>

European Innovation Council

<http://ec.europa.eu/research/eic>

EU budget for the future

http://ec.europa.eu/budget/mff/index_en.cfm

Latest call information Horizon 2020

https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/nmbp_h2020-leit-2018-2020_draft.pdf

