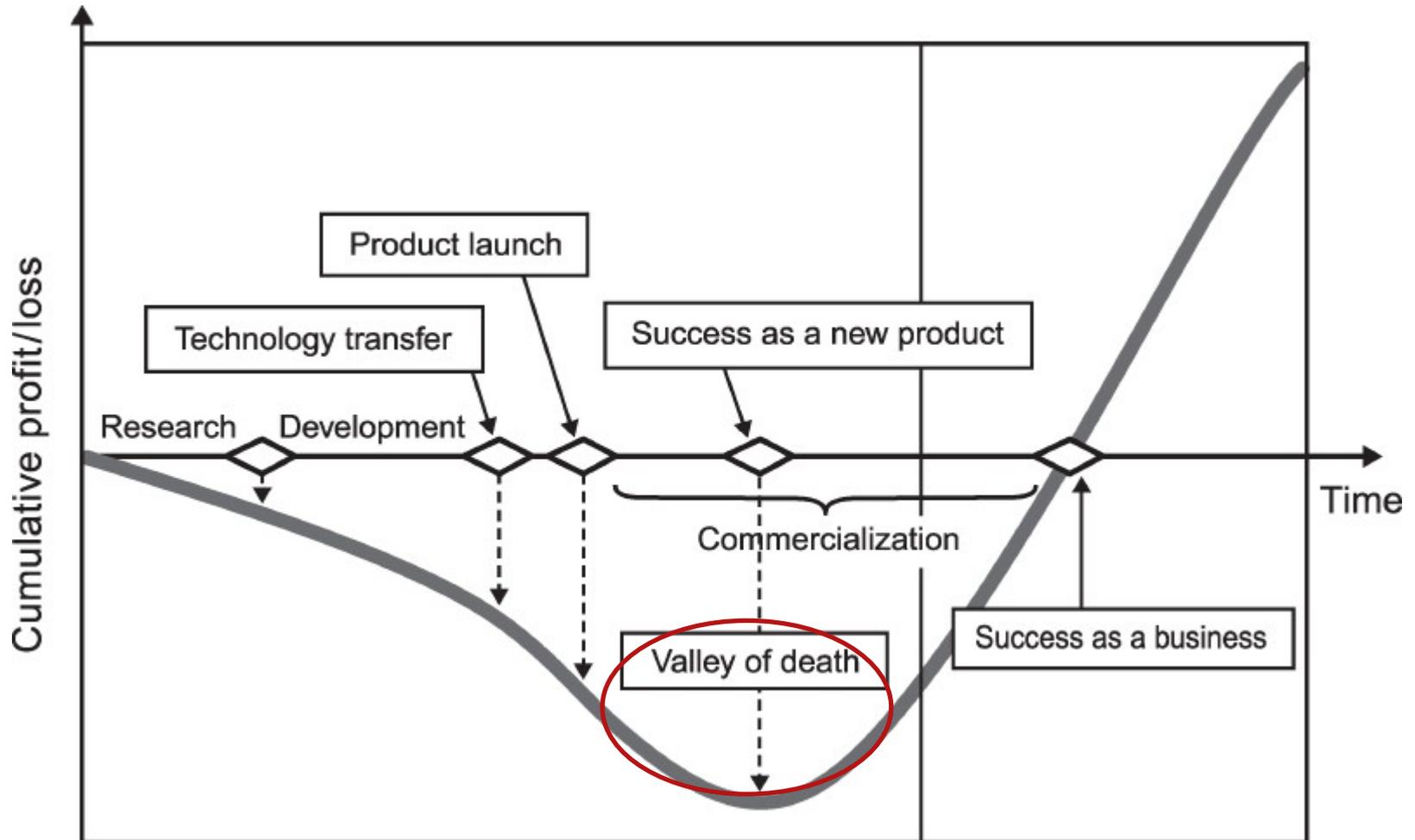


# ICT in Horizon 2020

With an emphasis on big data

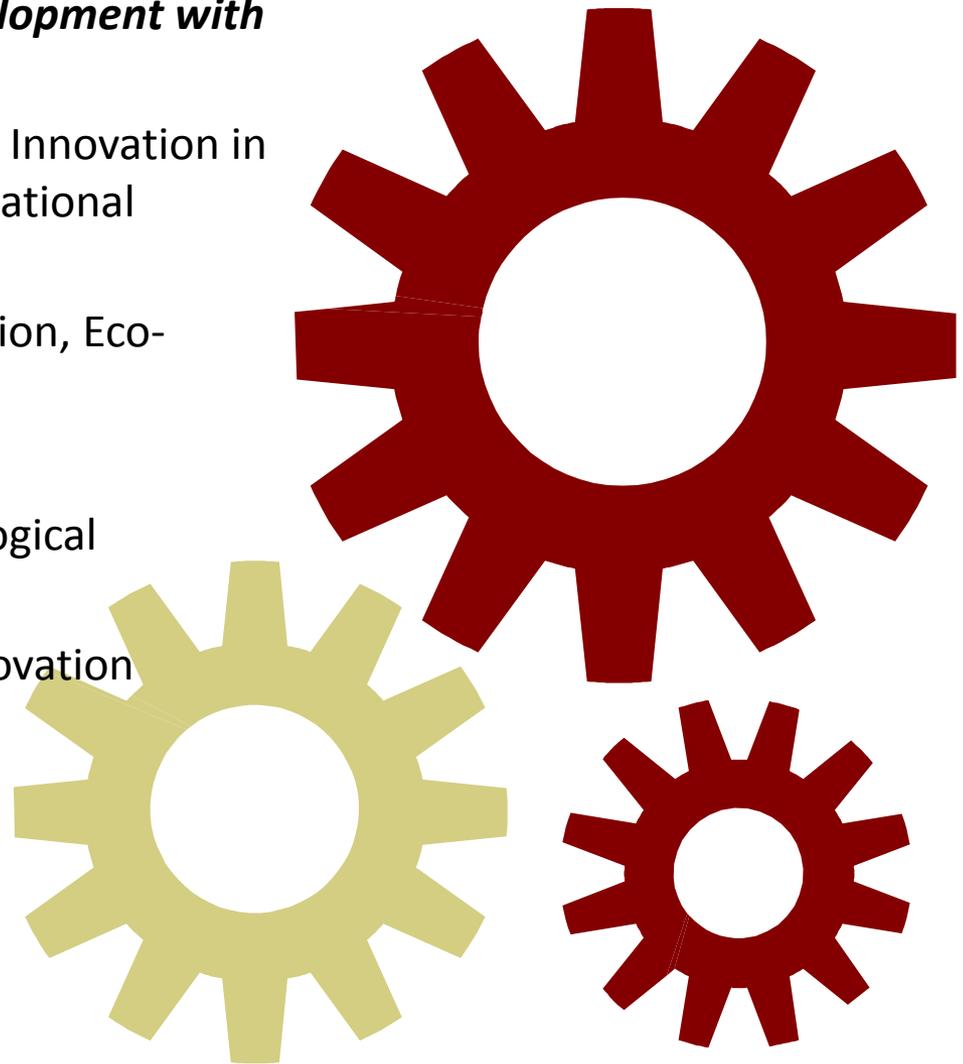
# Core of Horizon 2020



# A broader approach to innovation

## *Meshing research and technological development with*

- Product innovation, Service innovation, Innovation in design, ... including process and organisational innovation
- Social innovation, Public Sector innovation, Eco-innovation ...
- Exploration of new business models
  - Both technological & non-technological innovation
  - Both incremental & disruptive innovation



## Increased support to activities closer to users and markets

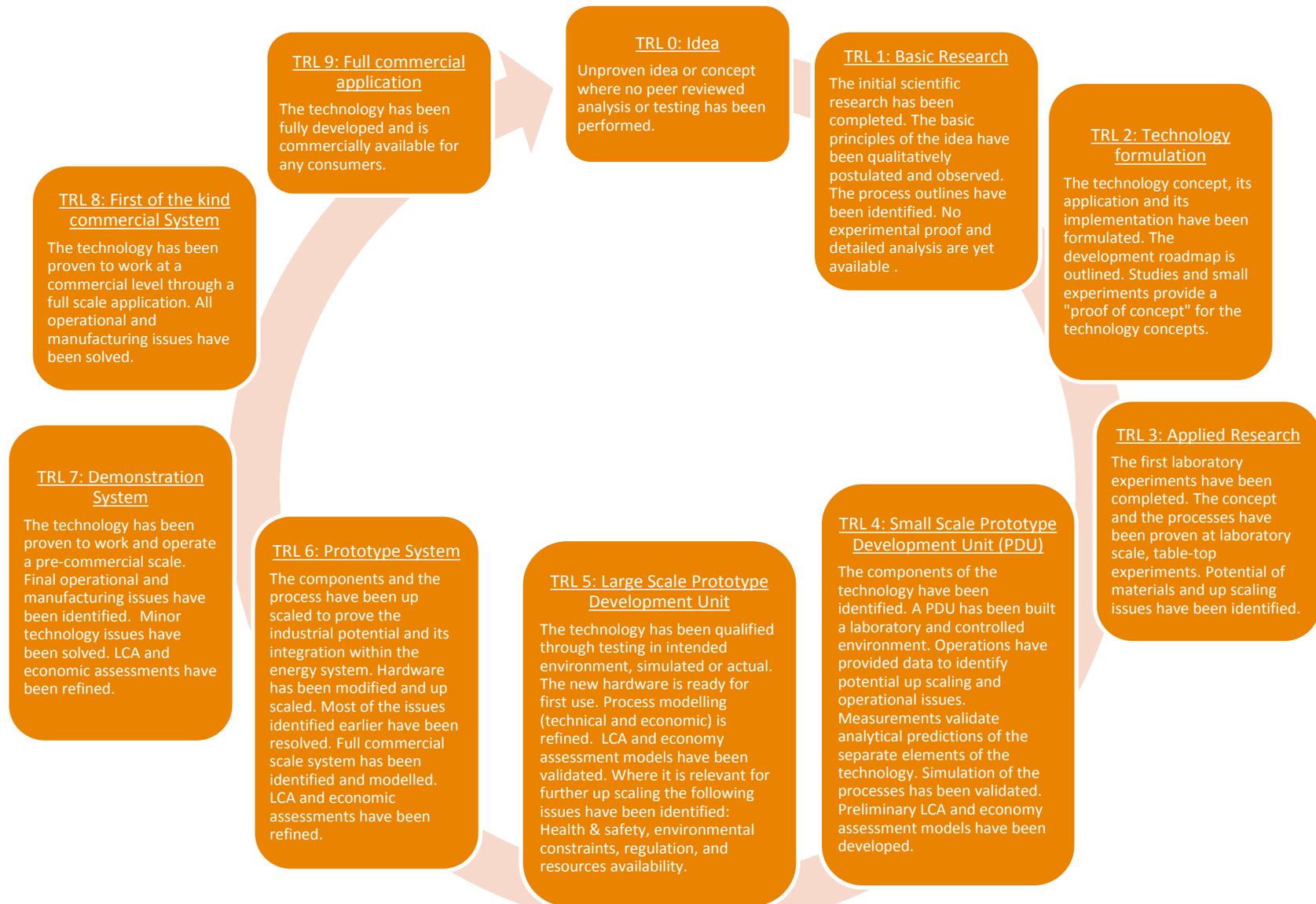
- Piloting, demonstration, prototyping
- Support to innovation “**market demand**”:
  - standards
  - innovation procurement
  - inducement prizes
  - bottom-up activities (more flexible call for proposals)
- A new **SME instrument**
- More extensive use of debt & equity instruments with **leverage** effect



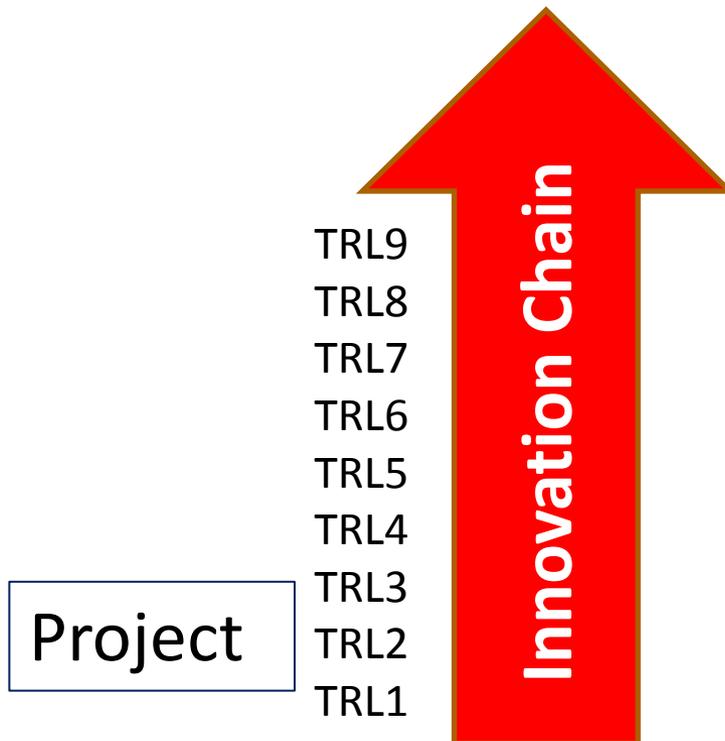
# Technology readiness levels in a nutshell

1	2	3	4	5	6	7	8	9
Basic principles observed	Technology concept formulated	Experimental proof of concept	Technology validation in lab	Technology validation in relevant environment	Demonstration in relevant environment	Demonstration in operational environment	System complete and qualified	Successful mission operations

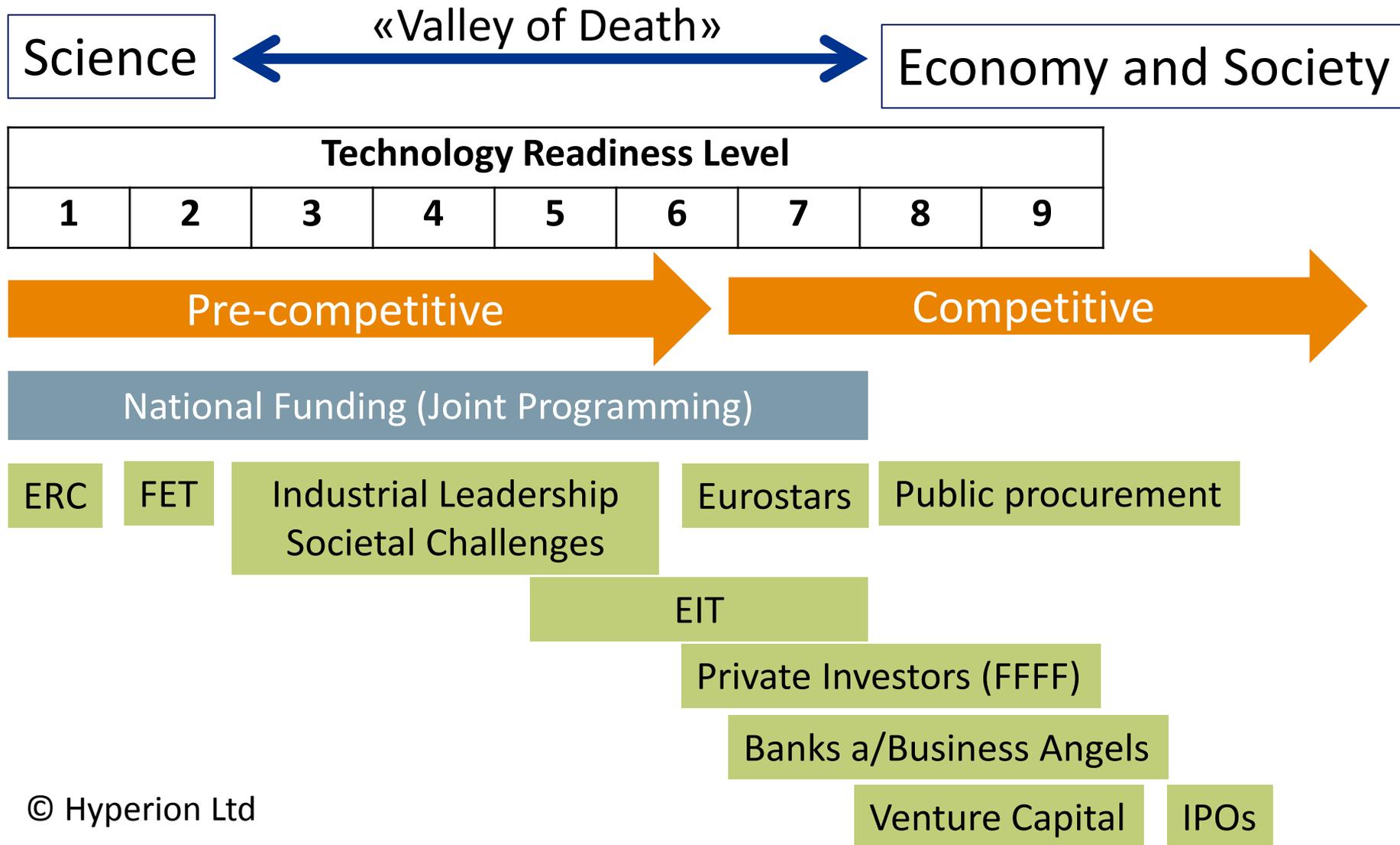
# Technology readiness levels



# The «Big Picture» Value chains/Stakeholder diagram/Ecosystem

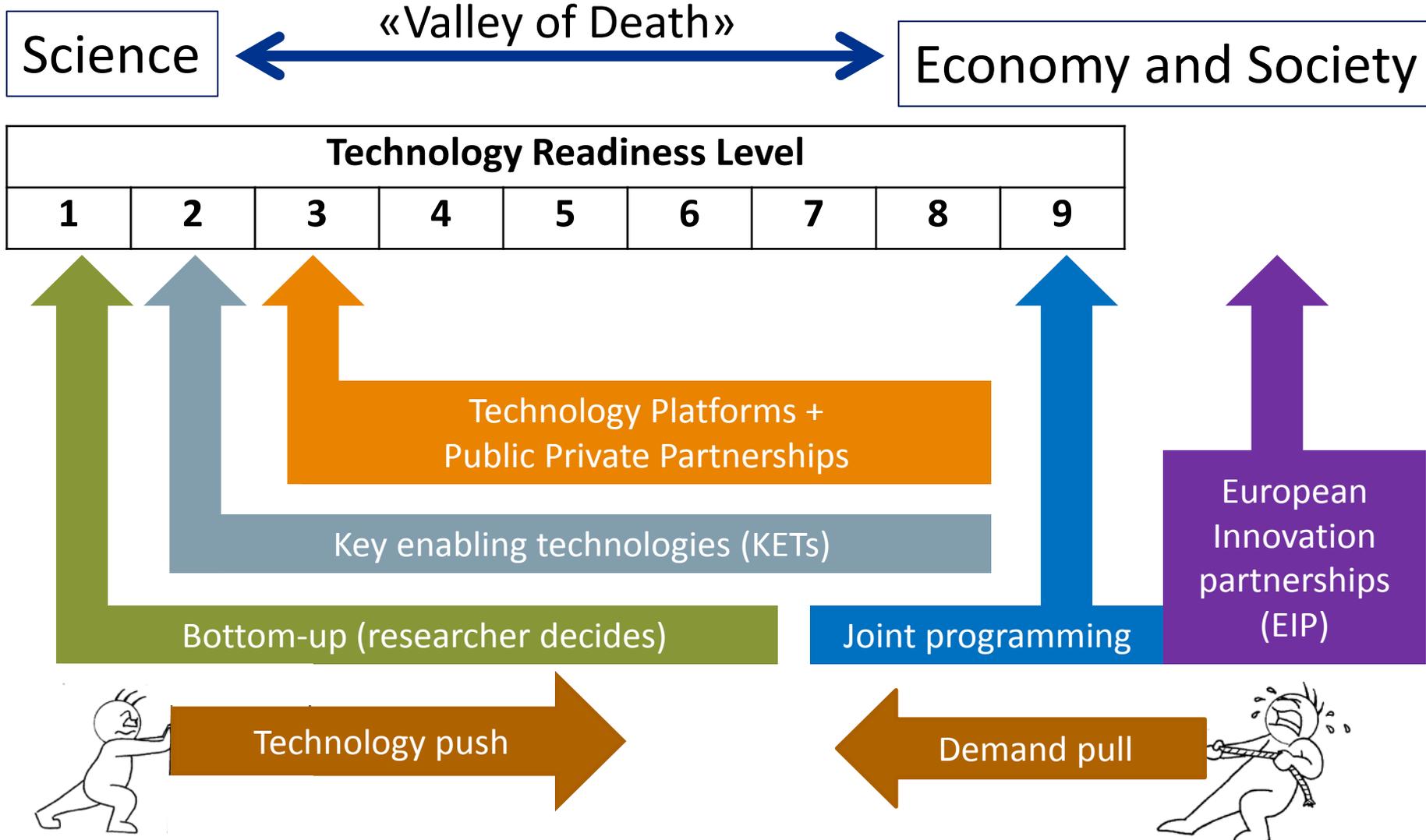


# Funding for research and innovation



# How priorities are identified

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## Pillar 1:

### Excellent Science

- European Research Council
- FET
- Marie Curie
- Infrastructures

## Pillar 2:

### Competitive industries

- Enabling technologies
- Access to risk finance
- Innovation in SMEs

## Pillar 3:

### Societal Challenges

- Health
- Food
- Energy
- Transport
- Climate
- Innovative, inclusive, secure societies
- Security

# Horizon 2020: Excellent Science

## European Research Council

- supports world leading blue sky research (bottom up)
- open to researchers from across the globe
- research carried out in EU or Associated Country

## Future and Emerging Technologies

- opening new fields of innovation
- FET Open – novel ideas (challenge current thinking)
- FET Proactive – developing topics & communities
- FET Flagship – addressing grand challenges

## Marie Curie Sklodowska Actions

- training & career development
- any discipline
- mobility, both transnational & intersectoral
- bottom up approach

## Research Infrastructures

- access to world class facilities
- including e-infrastructures & large datasets

# Horizon 2020: Industrial Leadership

## Leadership in Industrial & Enabling Technologies

- ICT, nanotechnologies, materials, biotechnology, manufacturing, space

## Access to Risk Finance

- Remedy market deficiencies in assessing risk finance for research and innovation
- Debt funding facility – loans, guarantees, counter-guarantees
- Equity funding facility – early stage venture capital

## Innovation in SMEs

- Dedicated SME instrument, feasibility, grant, commercialisation
- Dedicated activity for research-intensive SMEs in 'Innovation in SMEs'

# Horizon 2020: Societal Challenges

Health Demographic Change and Wellbeing

Food Security, Sustainable Agriculture, Marine and Maritime Research & the Bio-economy

Secure, Clean and Efficient Energy

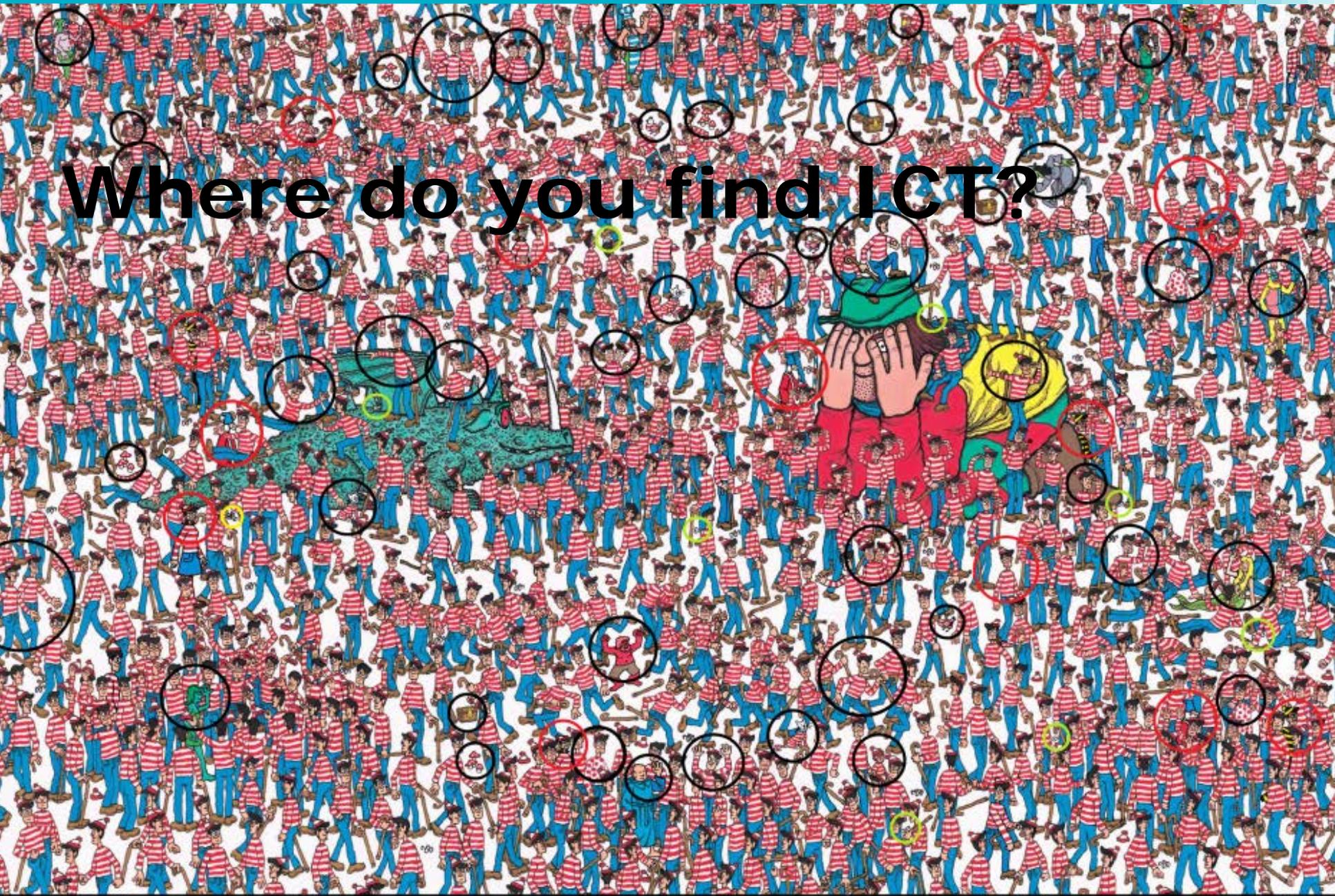
Smart, Green and Integrated Transport

Climate Action, Resource Efficiency and Raw Materials

Inclusive, Innovative and Reflective Societies

Secure Societies – protecting the freedom and security of Europe and its citizens

# Where do you find ICT?



**Information & Communication Technologies**  
Leading enabling and industrial technologies

JTI ECSEL  
AAL

EIT ICT Labs

Smart, green and  
integrated transport

FET

Health, demographic  
change and wellbeing

Security

PPP

Innovation in SMEs

Contractual - Institutional

Inclusive, innovative  
and secure societies

Food security, sustainable  
agriculture, marine and  
maritime research and the  
bioeconomy

Secure, clean and  
efficient energy

Climate action,  
resource efficiency  
and raw materials

# Joint Initiatives in Horizon 2020

## Joint Technology Initiatives

- Bio-based Industries
- Clean Sky
- Electronic Components and systems
- Fuel Cells and Hydrogen
- Innovative medicines

## Contractual PPPs

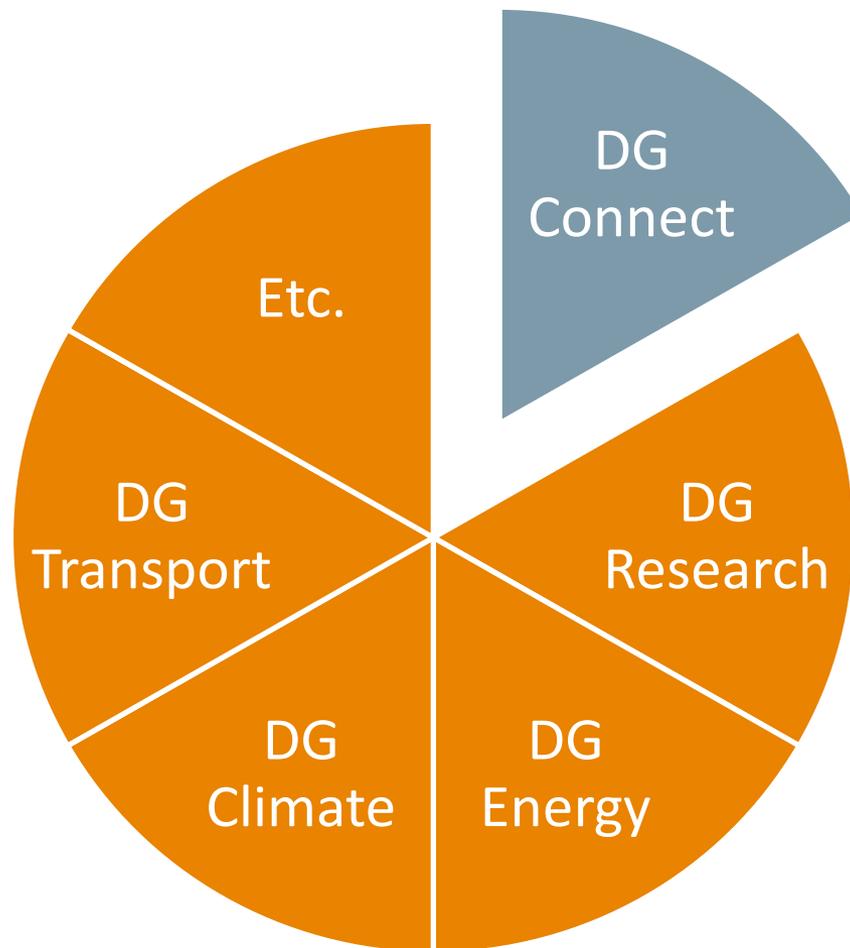
- Energy-efficient Buildings
- Factories of the Future
- Future Internet
- Green vehicles
- High Performance computing
- Photonics
- Robotics
- Sustainable Process Industries

## Public-public partnerships

- Active and Assisted Living
- European and Developing Countries Clinical Trials Partnership 2
- European Metropology Programme
- Eurostars 2

# Funding and confusion

For example: Societal Challenge smart, green and integrated transport



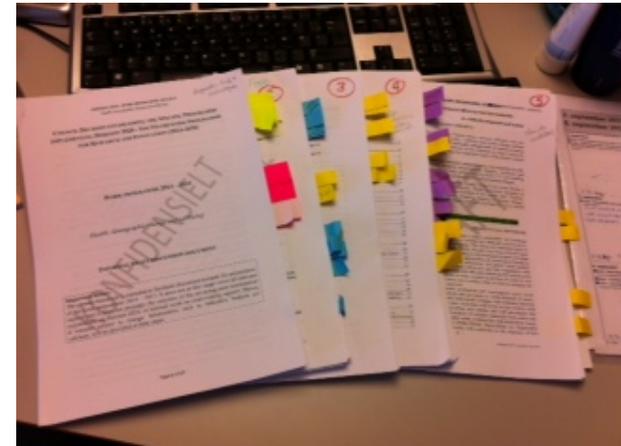
# «Data» in Societal Challenges

## Areas:

- Datasets
- Big data
- Data centres
- Data mining
- Data exchange
- Data transfer
- Data protection
- Data privacy
- Data preservation

## Programmes:

- Food – 41 times
- Transport – 50 times
- Energy – 25 times
- IIRS – 94 times
- Climate – 32 times
- Security – 77 times  
(6 explicitly big data)



## Things I have learned recently

- The importance of VALUE CHAIN understanding and your role in it
- Generally less specific on what you must do and what the results must be («top down is broader»)
- Who wrote the objective?
- Pick partners before you pick an idea
- Travel to Brussels to meet the Scientific officers because you want certain types of evaluators.

<http://www.hyperion.ie/h2020-mapping.htm>

[http://www.newyorker.com/online/blogs/culture/2013/05/cover-story-eureka-christoph-niemann.html?utm\\_source=dlvr.it&utm\\_medium=twitter&mobify=0](http://www.newyorker.com/online/blogs/culture/2013/05/cover-story-eureka-christoph-niemann.html?utm_source=dlvr.it&utm_medium=twitter&mobify=0)