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Business Tampere

STRUCTURE OF HORIZON EUROPE &

OVERVIEW OF FUNDING INSTRUMENTS FOR COMPANIES

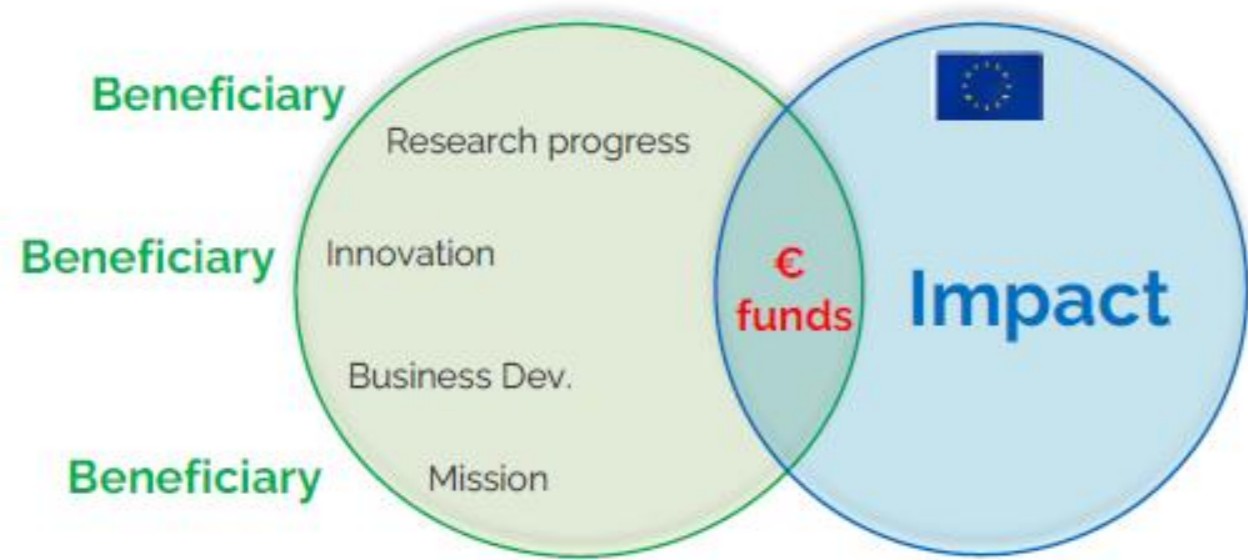BUSINESS
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Content by: European Fund Management Consulting – EFMC
WWW.EFMC.EU

Logic of EU funding and interests

Beneficiary

Beneficiary

Beneficiary

Research progress

Innovation

Business Dev.

Mission

€ funds

Impact

Key Impact Pathways (KIP);

SUSTAINABLE DEVELOPMENT G⦿ALS

1. Creating high-quality new knowledge		
2. Strengthening human capital in R&I	**Scientific Impact**	🔍 **Pillar I**
3. Fostering diffusion of knowledge and Open Science		
4. Addressing EU policy priorities & global challenges through R&I		
5. Delivering benefits & impact via R&I missions	**Societal Impact**	🌍 **Pillar II**
6. Strengthening the uptake of R&I in society		
7. Generating innovation-based growth		
8. Creating more and better jobs	**Economic Impact**	⚙ **Pillar III**
9. Leveraging investments in R&I		

4 Key Strategic Orientations → 15 "Impact Areas" → 32 "Expected Impacts"
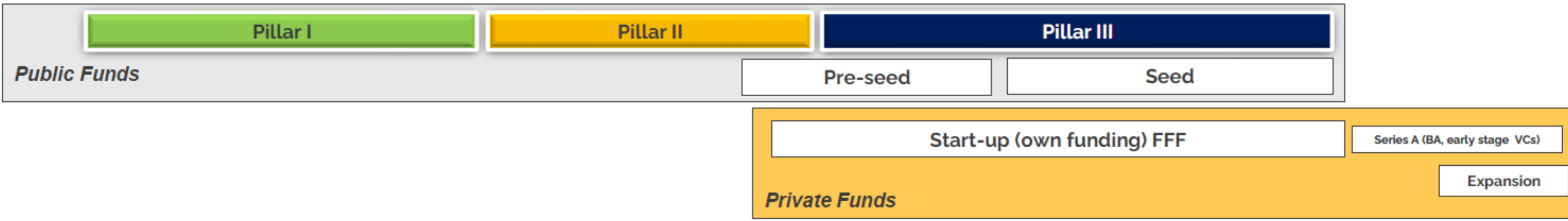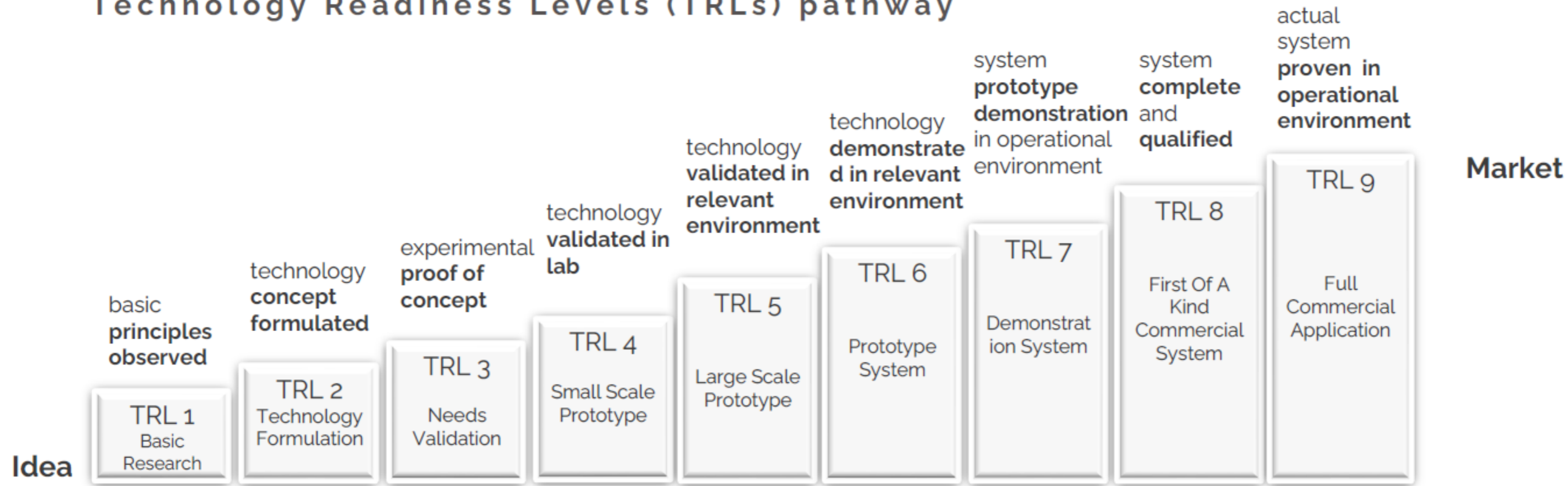
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Horizon 2020 vs. Horizon Europe
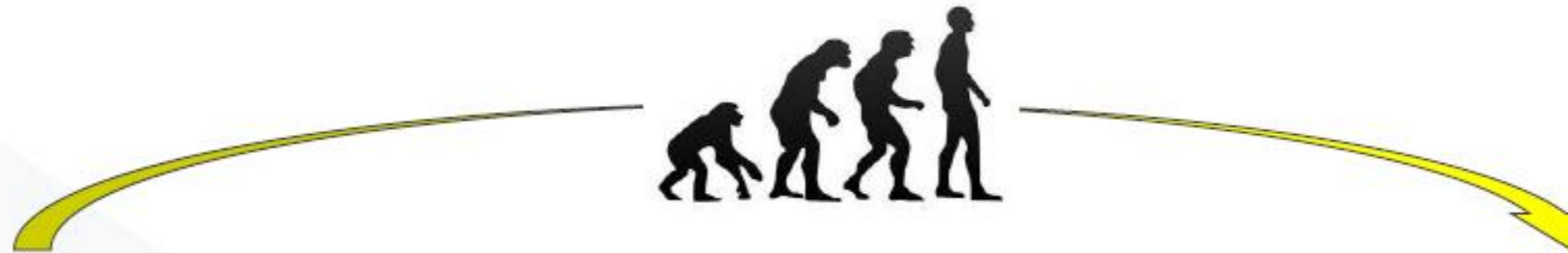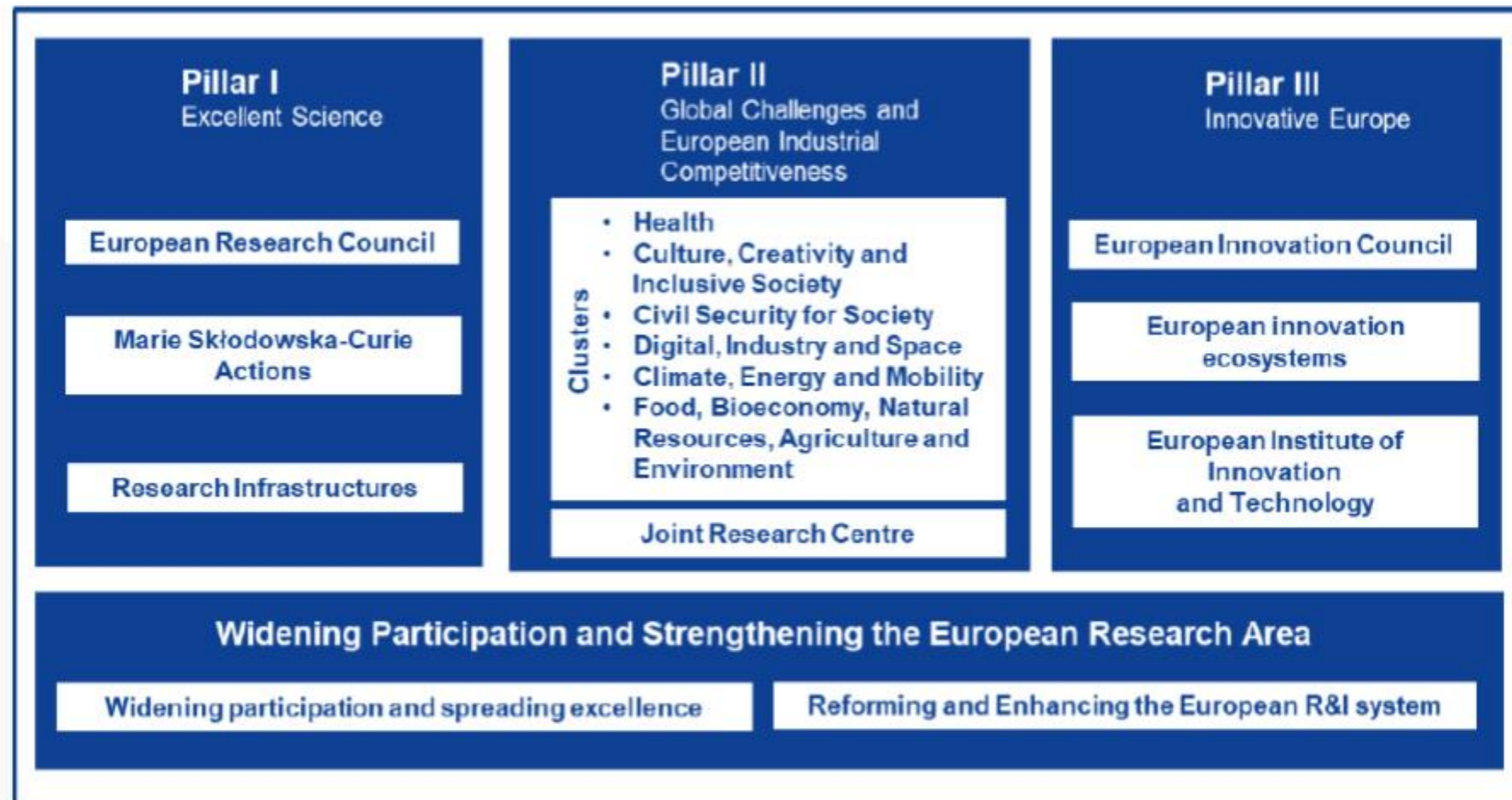
How are call topics defined?

- REGULATION (EU) 2021/695 **Horizon Europe** + **rules for participation** and **dissemination**
  - COUNCIL DECISION (EU) 2021/764 on establishing the **specific programme** implementing Horizon Europe
    (7 years)

- **Strategic Plan** (4 years) – sets Strategic Orientations & Impact Areas

- **Work Programmes** (2 years) – defines Destinations (packages of action) & Expected Impacts

- **Call for Proposal** (yearly) – contains one or more Topics with Outcomes

Logic of the Programme:
Technology Readiness Levels (TRLs) pathway

Idea

Market

- TRL 1 — Basic Research — basic **principles observed**
- TRL 2 — Technology Formulation — technology **concept formulated**
- TRL 3 — Needs Validation — experimental **proof of concept**
- TRL 4 — Small Scale Prototype — technology **validated in lab**
- TRL 5 — Large Scale Prototype — technology **validated in relevant environment**
- TRL 6 — Prototype System — technology **demonstrated in relevant environment**
- TRL 7 — Demonstration System — system **prototype demonstration** in operational environment
- TRL 8 — First Of A Kind Commercial System — system **complete** and **qualified**
- TRL 9 — Full Commercial Application — actual system **proven in operational environment**

Pillar I · **Pillar II** · **Pillar III**

Public Funds
- Pre-seed
- Seed

Private Funds
- Start-up (own funding) FFF
- Series A (BA, early stage VCs)
- Expansion

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Matching your "**IDEA**" with **Work Programmes / Funding Instruments**

... EU programs have different approaches

Bottom Up ↑
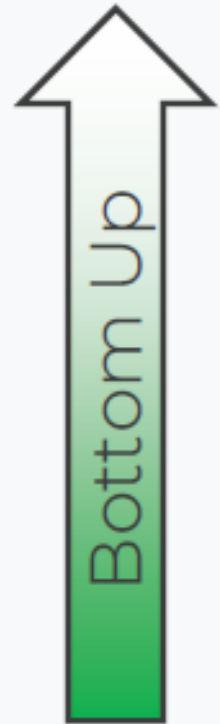
- **Open** to almost any research topic (few limitations)

- Topics are very **broad**

- The type of **funding instrument** is the core

Top Down ↓

- The **EC defines** the topics

- You **need to match** your idea with available topics

- The **type of action is a consequence** of the selection of the call «Topic/Challenge»

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Anatomy of Horizon Europe
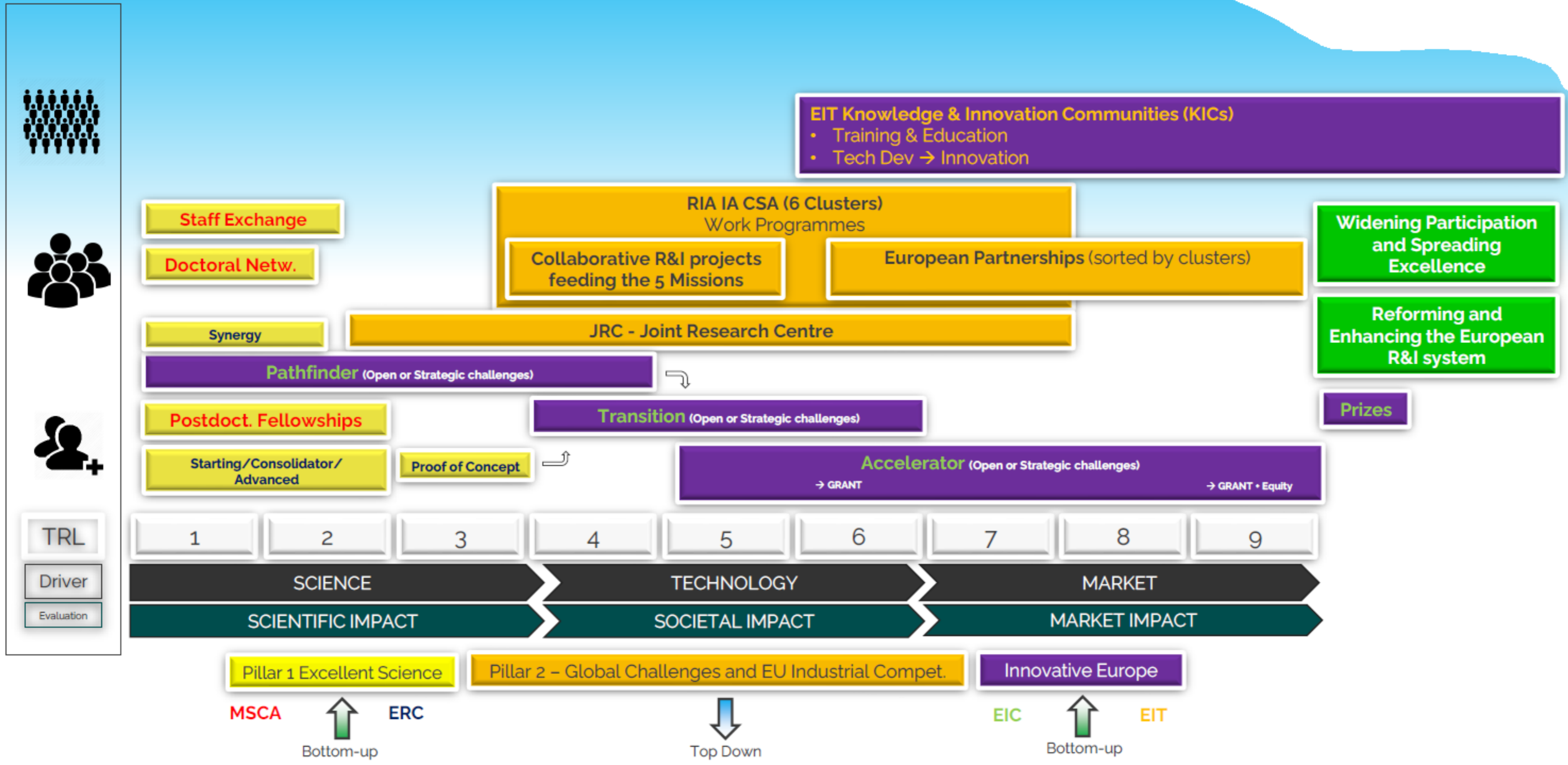
Types of actions & funding rates

Pillar II (€53.5 billion)

- **Research and innovation actions** (RIA) → establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution. **Basic** and **applied research, technology development** and integration, **testing** and **validation** on a **small-scale prototype** in a laboratory or simulated environment. 100% funding rate & (indirect = 25% of direct costs)

- **Innovation actions** (IA) → activities directly aiming at **producing plans** and **arrangements** or **designs** for new, altered or improved products, processes or services. **Prototyping, testing, demonstrating, piloting, large-scale product validation** and **market replication** → 70% funding rate (except for non-profit entities = up to 100%) & (indirect= 25% of direct costs)

- **Coordination and support actions** (CSA) → accompanying measures such as **standardisation, dissemination, awareness-raising** and **communication, networking,** coordination or support services, **policy dialogues** and **mutual learning** exercises and **studies,** including design studies for new infrastructure and may also include complementary activities of strategic planning, networking and coordination between programmes in different countries 100% funding rate & (indirect= 25% of direct costs)

- **Training and mobility action** (MSCA) → Unit costs
- **ERC Grants** → 100% funding rate & (indirect= 25% of direct costs)

Pillar I (€25 billion)

- **EIC Pathfinder** → 100% funding rate & (indirect= 25% of direct costs)
- **EIC Transition** → 100% funding rate & (indirect= 25% of direct costs)
- **EIC Accelerator** → 70% funding rate & (indirect= 25% of direct costs)
- **EIT Framework Partnership Agreement / Specific Grant Agreement**

Pillar III (€13.6 billion)

- ERA-NET Cofund actions → 33%
- European Joint Programme (EJP) Cofund action → 70%
- Pre-Commercial Procurement (PCP) → 30% (25% indirect)
- Public Procurement of Innovative Solutions (PPI) → 30% (25% indirect)
- Prizes → lump sum

Pillar 2

Global Challenges and European Industrial Competitiveness

Pillar 2 – Clusters / Strategic Orientations / Impact Areas

4 Key Strategic Orientations

A) Promoting an open strategic autonomy by leading the development of **KEY DIGITAL, ENABLING AND EMERGING TECHNOLOGIES, SECTORS AND VALUE CHAINS** to accelerate and steer the digital and green transitions through human-centred technologies and innovations

B) Restoring Europe's **ECOSYSTEMS AND BIODIVERSITY, AND MANAGING SUSTAINABLY NATURAL RESOURCES** to ensure food security and a clean and healthy environment

C) Making Europe the first **DIGITALLY ENABLED CIRCULAR, CLIMATE-NEUTRAL** AND **SUSTAINABLE ECONOMY** through the transformation of its mobility, energy, construction and production systems

D) Creating a more **RESILIENT, INCLUSIVE AND DEMOCRATIC EUROPEAN SOCIETY**, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality health care, and empowering all citizens to act in the green and digital transitions

15 Impact Areas

1. A competitive and secure data-economy
2. Industrial leadership in key and emerging technologies that work for people
3. Secure and cybersecure digital technology
4. High quality digital services for all

5. Enhancing ecosystems and biodiversity on land and in waters
6. Clean and healthy air, water and soil
7. Sustainable food systems from farm to fork on land and sea

8. Climate change mitigation and adaptation
9. Affordable and clean energy
10. Smart and sustainable transport
11. Circular and clean economy

12. A resilient EU prepared for emerging threats
13. A secure, open and democratic EU society
14. Good health and high-quality accessible healthcare
15. Inclusive growth and new job opportunities

Contributing Clusters

1), 2), 3), 4), 5)

1), 4), 5), 6)

1), 4), 5), 6)

1), 2), 3), 4), 5), 6)

Pillar 2 – Clusters & Destinations

Cluster 1 - Health

(45 calls)

1. **Staying** healthy
2. Living & working in a **health-promoting environment**
3. Tackling **diseases** & reducing disease burden
4. Innovative, sustainable and high-quality **health care**
5. Unlocking the full potential of **new tools, technologies and digital solutions** for a healthy society
6. Maintaining an innovative, sustainable & globally competitive **health industry**

Cluster 2 - Culture, Creativity and Inclusive Society

(44 calls)

1. **Democracy** and **Governance**
2. European **Cultural Heritage** and the Cultural and **Creative Industries**
3. **Social** and **Economic transformations**

Cluster 3 - Civil security for Society

(77 calls)

1. Better protect the EU and its citizens against **Crime** and **Terrorism**
2. Effective management of **EU external borders**
3. Protected **infrastructure**
4. Increased **Cybersecurity**
5. A **Disaster-Resilient** Society for Europe
6. **SSRI** (Strengthened Security Research and Innovation)

Cluster 4 - Digital, Industry and Space

(194 calls)

1. Climate neutral, circular and digitised **production**
2. increased autonomy in **key strategic value chains** for resilient industry
3. world leading **data and computing technologies**
4. **digital and emerging technologies** for competitiveness and fit for the green deal
5. open strategic autonomy in developing, deploying and using global **space-based infrastructures**, services, applications and data
6. a human-centred and ethical development of **digital and industrial technologies**

Cluster 5 - Climate, Energy and Mobility

(180 calls)

1. **Climate sciences** and responses
2. Cross-sectoral solutions for the **climate transition**
3. Sustainable, secure and **competitive energy supply** -2021-2024
4. Efficient, sustainable and inclusive **energy use**
5. Clean and competitive solutions for all **transport mode**
6. Safe, Resilient **Transport and Smart Mobility** services for passengers and goods

Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture and Environment

(179 calls)

1. **Biodiversity** and **Ecosystem** Services
2. Fair, healthy and environmentally-friendly **food systems** from primary production to consumption
3. **Circular economy** and **bioeconomy** sectors
4. **Clean environment** and **zero pollution**
5. **Land, oceans and water** for climate action
6. Resilient, inclusive, healthy and **green rural, coastal and urban communities**
7. Innovative **governance**, environmental **observations** and **digital solutions** in support of the **Green Deal**

- 34 Destinations
- about 719 Calls/Topics

Pillar 2 – Clusters – Expected Impacts

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Cluster 1 - Health

1. Staying healthy in a rapidly changing society
2. Living & working in a health-promoting environment
3. Tackling diseases & reducing disease burden
4. Ensuring access to innovative, sustainable & high-quality health care
5. Unlocking the full potential of new tools, technologies and digital solutions for a healthy society
6. Maintaining an innovative, sustainable & globally competitive health industry
7. Democratic governance is reinvigorated….
8. The full potential of CCC sectors is realised…..
9. Social and economic resilience and sustainability are strengthened…
10. Inclusive growth is boosted and vulnerabilities are reduced effectively…

Cluster 2 – CC & IS

Cluster 3 - Civil security for Society

11. Enhanced disaster risk reduction
12. Improved air/land/sea border management & maritime security
13. Tackling crime and terrorism, and threats to infrastructures
14. Increased cybersecurity and a more secure online environment

Cluster 4 - Digital, Industry and Space

15. Global leadership in clean & climate-neutral industrial value chains, circular economy and climate-neutral digital systems and infrastructures
16. Industrial leadership and increased autonomy in key strategic value chains with security of supply in raw materials
17. Globally attractive, secure and dynamic data-agile economy
18. Open strategic autonomy in digital technologies and in FET
19. Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data
20. A human-centred and ethical development of digital and industrial technologies

Cluster 5 - Climate, Energy and Mobility

21. Transition to a climate-neutral and resilient society and economy
22. Clean and sustainable transition of the energy and transport sectors
23. Efficient, clean, sustainable, secure, and competitive energy supply
24. Efficient and sustainable use of energy
25. Climate-neutral and environmental-friendly mobility
26. Safe, seamless, smart, inclusive, resilient, climate neutral and sustainable mobility systems

27. Climate neutrality and adaptation to climate change
28. Preservation and restoration of biodiversity and ecosystems
29. Sustainable and circular management of natural resources; tackling pollution;
30. Food and nutrition security for all from sustainable food systems from farm to fork
31. Balanced development of rural, coastal and urban areas
32. Innovative governance models enabling sustainability, environmental observation

Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture and Environment

Pillar 3

Innovative Europe

Pillar 3 – Innovative Europe

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Will Europe be able to catch the 6th "wave of Innovation"?

- *5th WAVE* → *Built on* **computers and digital communications** *networks (USA and China won, Facebook, Google, Uber, etc.).* **B2C**

- *6th WAVE* → **Sustainable technology-driven growth**.
  - European industries excel in **B2B** engineering services (e.g. manufacturing or oil and gas production)
  - This sector will be **at the heart of the next wave** of sustainable technology-driven growth

- **EU research Paradox**

- Fragmentation of the Innovation Ecosystem

- Concentration in (not well connected) big cities.

Pillar 3 – European Innovation Council

- **EIC is for breakthrough / disruptive, market-creating, deeptech innovation**, with high levels of **RISK!**
- **Most promising ideas to real world** application - Support the **scaling-up** of innovative start-ups and companies
- Ensuring that excellent research, including **FET** and other **Pillars**, is transformed into practical solutions.
- **Low Bureaucracy** (application paper)
- **OPEN** vs **CHALLENGES**

Transition: Grant brings innovation closer to market operators and investors and scale up of companies. Bridging the "Valley of Death" **Applicant: single SME**. Start-up, mid-cap, established in a MS or associated country, or, **Consortium** up to 5 entities
Grant up to 2.5 M€

Accelerator: Grant brings innovation closer to market operators and investors and scale up of companies. Bridging the "**Valley of Death**" Applicant: **single SME**. Start-up, mid-cap, established in a MS or associated country.
Grant: up to 2.5 M€ (70%) (not for mid-cap)
Equity or **guarantee:** 0,5 - 15 M€ (Exceptionally mid-cap)
- **Years to exit:** 7-10, up to 15 (patient capital)
- **voting shares:** 10% to 25%
"**Grant only**": exceptionally
- if can demonstrate you have own funding for TRL9, or
- You are still very far from TRL9

Pathfinder (Visionary Thinking – No Incremental Innovation):
Future and emerging breakthrough technologies which are key to disruptive innovations.
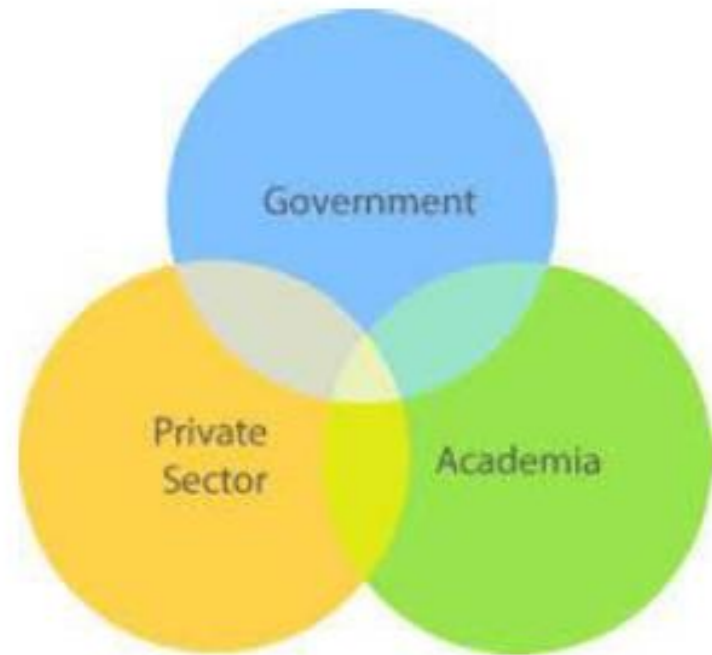- **RIA:** 3 M€ (100%) - min 3 Partners

1   2   3   4   5   6   7   8   9

Innovation/Technology Readiness (TRLs)

Pillar 3 – EIT European Institute for Technology and Innovation

very large, distributed public-private consortia
- companies,
- universities
- research centres
- cities and regions
- financial partners

KIC
Knowledge Innovation Community

EU Body

Framework Partnership Agreement

Specific Grant Agreement (Annual)

Business Plan (Annual)

- Activities
  - ✓ **entrepreneurial** education and training
  - ✓ **innovation** projects,
  - ✓ **business creation** activities;
  - ✓ support services for **start-ups, scale-ups and SMEs**

- Pilot initiatives as necessary to **improve the market exploitation** and **commercialization** of results funded by the clusters, facilitate conversion into new businesses activities and promote the uptake of **entrepreneurial skills** among researchers and innovators