PMI Network

Cooperazione Transfrontaliera per l'Innovazione

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I finanziamenti europei per le PMI: opportunità e sfide

Agenda

- What are EU funding opportunities?
- Why participating to EU funding?
- How can I participate?
- Q&A

Introduction to EU grants
Why participating to EU grants?

Introduction to EU Funds

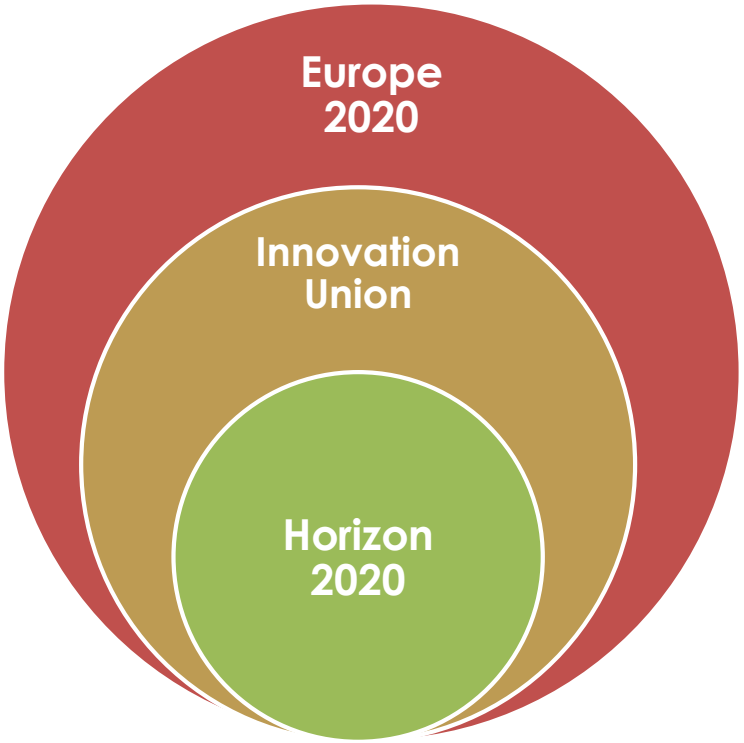
- Why searching for funds?
  - Research needs funds. The higher the ambition (risk) the higher the need for funds
  - Connection with research (especially for Programmes that are more research oriented)
  - Opportunity to be part of an international network, valuable beyond the EU grant
  - International visibility
  - Positive funding cycle

The opportunities of European funding
A jungle of funds

Glossary: the “jargon”

- How would you define the following terms?
  - “European project”
  - “Work Programs”
  - “Call for proposals”
  - “Grant”
  - “Funding scheme”
- Do you know these bodies?
  - EC Directorates (DG Connect, DG Home, DG Move, DG Env, etc.)
  - Executive Agencies and Institutional bodies (REA, INEA, ERC, EIC, EIT, etc.)
  - Other bodies involving stakeholders (ETP, PPP: BDVA, TPWind, CleanSky JTI, etc.)
- Who are the EU Member states (MS) and the Associated Countries (AC)?
  - And what about the rest of the world?

A little bit of the background: European Strategy



- Europe 2020: Strategy for Smart, Sustainable, and Inclusive growth
- Innovation Union: Flagship initiative to support research and innovation
- Horizon 2020: Strategic research framework for research and innovation (2014 – 2020)

A little bit of the background: Europe 2020 Strategy

- 10 year strategy to make the EU more dynamic and competitive
- Three key drivers: Smart, sustainable and inclusive growth
- Targets include 3% of the EU's GDP should be invested in R&D
- Seven '**Flagship Initiatives**':
  - **Innovation Union**
  - Youth on the move
  - A digital agenda for Europe
  - Resource efficient Europe
  - An industrial policy for the globalisation era
  - An agenda for new skills and jobs
  - European platform against poverty

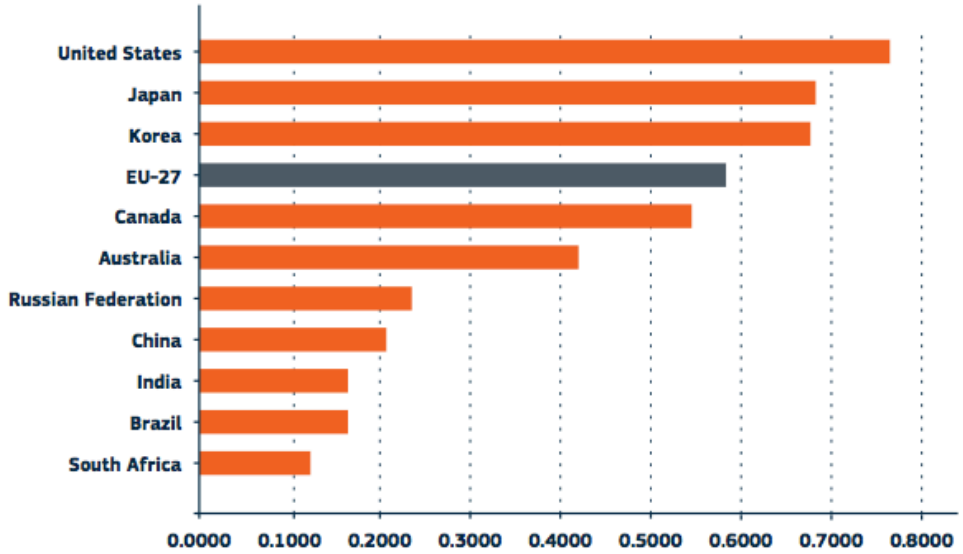
Why do we need Innovation Union?

Europe's future is connected to its power to innovate

Europe's global economic ranking is changing rapidly. By 2050, Europe's share of world GDP is likely to be half of today's 29%. So far, Europe has been able to keep its share of world exports (20%), and in that respect our performance is better than that of other advanced economies. But China, India and Brazil have started to catch up with the EU by improving their economic performance faster than the EU has, year-on-year, over the last five years.

Innovation Union

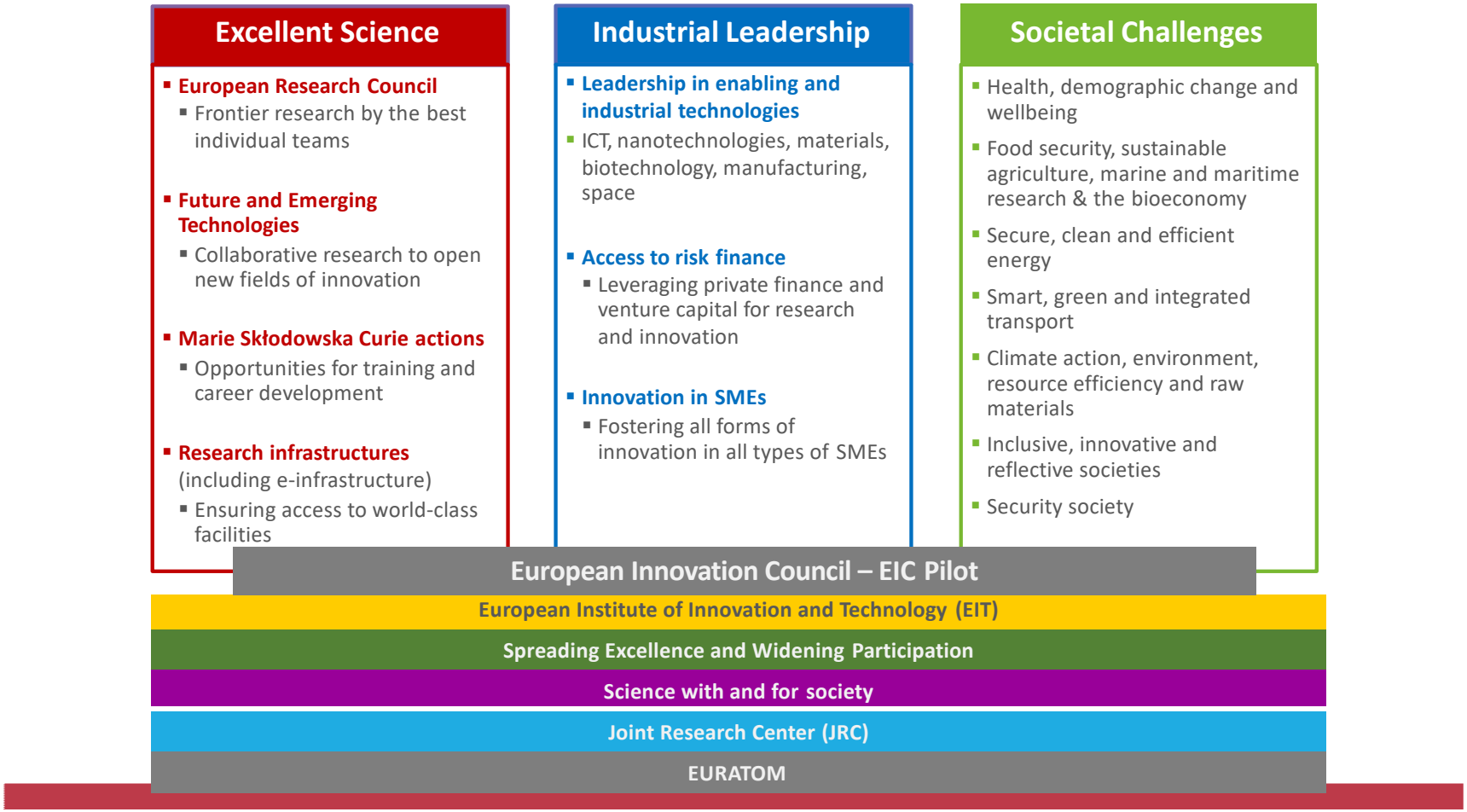
- EU-27 Performance in Innovation compared to main competitors - Innovation



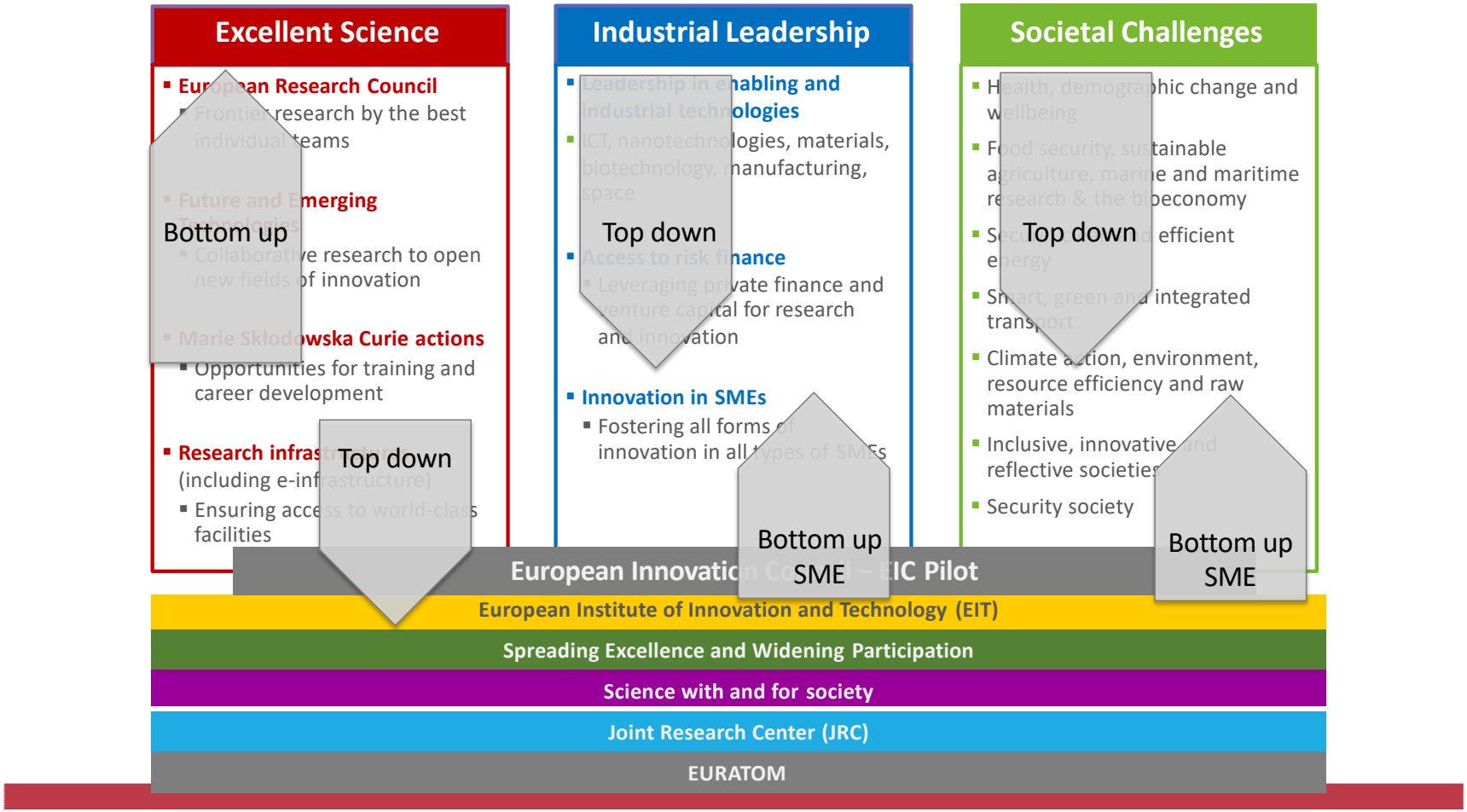
- What is innovation? “Innovation is the ability of individuals, companie, and entire nations to continuously create their desired future”

John Kao, “Innovation Nation” (2007)

Horizon 2020 at a glance



Horizon 2020 at a glance



Rules for participating

- The “3 partners from 3 countries (MS/AC)” rule
  - Some Exceptions (e.g. EIC Accelerator Pilot)
- Funding schemes: RIA, IA, CSA, PCP
  - Different % of funding according to schemes and type of partner
- Evaluation Criteria:
  - Excellence (only evaluation criteria for ERC proposals)
  - Impact
  - Quality and Efficiency of implementation
- Evaluation Summary Report (ESR) and the relevant role of the Impact
  - TRL and the go market approach

G. Technology readiness levels (TRL)

Where a topic description refers to a TRL, the following definitions apply, unless otherwise specified:

- TRL 1 – basic principles observed
- TRL 2 – technology concept formulated
- TRL 3 – experimental proof of concept
- TRL 4 – technology validated in lab
- TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 7 – system prototype demonstration in operational environment
- TRL 8 – system complete and qualified
- TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

Technology Readiness Level (TRL)

- The work programmes include information on what TRL should be achieved at the end of the project
- Partly information on what TRL the project should start

The internationally recognised and industrially applied concept of "Technology Readiness Levels" (TRL) outlines in detail the different research and deployment steps, which support the innovation and industrialisation process of technologies to transform ideas to the market.

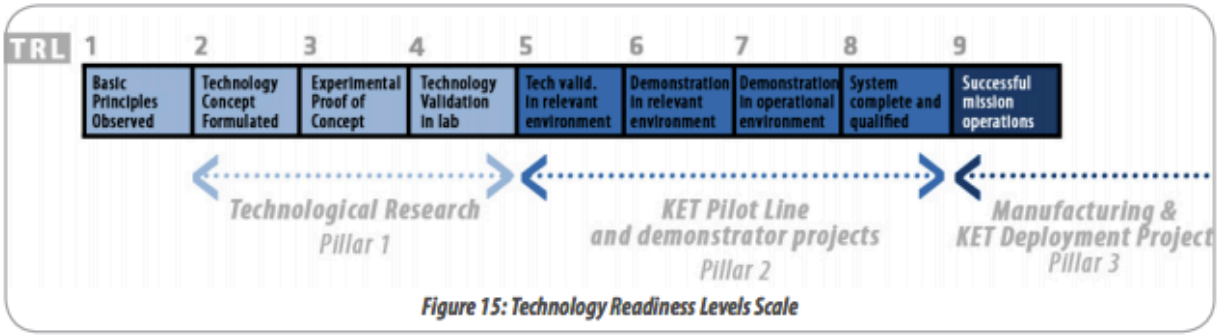


Figure 15: Technology Readiness Levels Scale

The TRL concept fully applies to the three-pillar-bridge approach. As indicated in the above graphic, level 1 concerns basic research, levels 2 - 4 describe the activities of technological research (pillar 1), and levels 5 - 8, product develpoment (i.e. process technology development in pilot lines, prototyping, and demonstrators actions - pillar 2). The future KETs programme in the CSF should include an "integration initiative" for these platforms to create European-added value through coordinated access for external stakeholders and collaborative development support actions. The deployment of KETs with manufacturing activities starts at level 9. The future KETs programme in the CSF should fully and simultaneously support all these activities up to and including level 8 along with the supporting infrastructures (technological platforms and pilot lines along with first-in-kind equipment and facilities).

Types of projects (Horizon2020)

- RIA: R&D Projects
  - Basic research, applied research, technology development and integration, and testing and validation on a small scale prototype in a laboratory or simulated environment
  - Funding rate 100%
  - TRL: 1 – 5/6 + clinical tirals in phases 1 and 3
- IA: Close to market projects
  - Prototyping, testing, demonstrating, piloting, large-scale product validation and market replication
  - Funding rate 70/100%
  - TRL: 6 to 7/8 or 9

Priority 1. Excellent Science

- Why?
  - World class science is the foundation of tomorrow's technologies, jobs and well being
  - Europe needs to develop, attract and retain research talent
  - Researchers need access to the best infrastructures
- How?
  - Bottom-up ("any topic goes")
  - Top down for research infrastructures
  - Excellence-driven project
  - Funding for
    - Individual teams,
    - Starting researchers to make the transition to independence
    - New ways of working with potential to create breakthrough results

Excellent Science

- European Research Council (ERC)
  - Frontier research by best individual teams
- Future and Emerging Technologies (FET)
  - Collaborative research to open new fields of innovation
- Marie Sklodowska Curie Actions
  - Opportunities for training and career development
- Research Infrastructures (including e-infrastructures)
  - Ensuring access to world-class facilities

Marie Curie Actions (MSCA)

Innovative Training Networks (ITN)	Doctoral and initial training of researchers proposed by international networks of organisations from public and private sectors
Individual Fellowships (IF)	Individual fellowships for most promising experienced researchers to develop their skills through international or inter-sector mobility
R&I Staff Exchange (RISE)	International and inter-sector cooperation through the exchange of research and innovation staff
COFUND	Co-funding of regional, national and international programmes

MSCA Features

- Bottom-up approach
- Mobility, both trans-national and inter-sectoral
  - Opening research careers at European and International level
  - Enhanced business-academia collaboration and staff exchange
- Excellent employment and working conditions, in line with the EU Charter and Code for Researchers
- Broad definition of industry involvement: participation of businesses (including SMEs) and other socio-economic actors
- H2020 synergies with Excellent Science, societal challenges, industrial technologies, EIT
- Developing synergies with Erasmus for All programme
- Strong emphasis on outreach activities and communicating research
- Reputation

Priority 2: Industrial Leadership

- Why?
  - Strategic investments in key technologies (e.g. advanced manufacturing, micro-electronics) underpin innovation across existing and emerging sectors
  - Europe needs to attract more private investment in research and innovation
  - Europe needs more innovative SMEs to create growth and jobs
- How
  - Top down approach for LEIT
  - Bottom up approach for SMEs

Industrial Technologies

- Leadership in enabling and industrial technologies (LEIT):
  - ICT; Nanotechnologies; Advanced Materials; Biotechnology; Advanced Manufacturing and Processing; Space
- Access to risk finance
  - Leveraging private finance and venture capital for research and innovation
- Innovation in SMEs
  - Fostering all forms of innovation in all types of SMEs

The conditions related to this topic are provided at the end of this call and in the General Annexes.

ICT-38-2020: Artificial intelligence for manufacturing

Specific Challenge: State-of-the-art AI technologies need to be integrated with advanced manufacturing technologies and systems in order to exploit their potential in manufacturing and process industry. AI systems cooperating with humans can improve production planning and execution, and can help to improve quality of products and processes.

To widely deploy these technologies, specific attention has to be given to standardisation, synchronising EU and Member States activities, and to international collaboration.

Scope: **a) Research and Innovation Actions (RIA)**

The focus is on integrating state-of-the-art AI technologies in the manufacturing domain, for example in agile production processes and predictive quality, taking into account the domain-specific requirements in terms of time criticality, safety and security, finding effective ways for collaboration between humans and AI systems, and exploiting the strengths of both humans and machines while keeping the human in control. Ethical principles, as expressed by the high-level expert group on Artificial Intelligence [12] should be followed and recommendations for instantiation in the manufacturing domain should be developed. Proposers are encouraged to build on existing results from artificial intelligence research, for example ICT-26-2018-2020.

Proposals must develop innovative concepts and tools that take into account the status and availability of all relevant production resources, learn from past experiences, and deal effectively with unforeseen events. If appropriate, AI techniques should be combined with digital twins and real-life feedback from the shop floor or production facility to improve quality of products and processes. Generative design approaches for products and processes are encouraged.

Developed technologies and solutions should be demonstrated in at least two different realistic manufacturing use cases of significant economic value. If applicable, legal obstacles to implementation of the proposed solutions should be identified.

The Commission considers that proposals requesting a contribution from the EU of between EUR 4 and 6 million would allow this area to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

b) Coordination and Support Actions (CSA)

Standardisation

Proposals are expected to extend, further develop, and support the implementation of a model for the synchronisation of standardisation activities on AI and related digital technologies in

[12] https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai

manufacturing at large, at the Member State level and at the European level – and in a global context, taking into account legal and ethical issues where relevant. Proposals need to build on previous activities, such as the results of the Joint MSP/DEI Working Group on standardisation in support of Digitising European Industry[13].

Cooperation EU-Japan

Proposals are expected to support possible cooperation with Japan, in areas relevant for AI-driven innovation in manufacturing and digital industrial platforms. Proposals will assess opportunities, and kick-off cooperation activities, by organising contacts between researchers and companies from EU and Japan working on AI applications for manufacturing, encouraging the exchange of information on the respective research programmes and technological results. Proposals shall foresee twinning with entities participating in projects funded by Japan to exchange knowledge and experience, exploit synergies and develop recommendations for further sustainable cooperation and collaboration activities.

The Commission considers that proposals requesting a contribution from the EU of EUR 0.5 million would allow these areas to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. One coordination and support action will be supported for each of the two areas above.

Expected Impact: Research and Innovation Actions

- Products and services usable in a wide range of manufacturing processes leading to agile production processes and improved quality of products and processes
- Humans working together with Artificial Intelligence systems in optimal complementarity

Coordination and Support Actions

- Increased synchronisation and cooperation on AI and related digital technologies in manufacturing, with higher global impact

Proposals need to describe how the proposed work will contribute to the impact criteria above, provide metrics, the baseline and targets to measure impact.

Type of Action: Research and Innovation action, Coordination and support action

The conditions related to this topic are provided at the end of this call and in the General Annexes.

[13] https://ec.europa.eu/digital-single-market/en/news/second-workshop-standardisation-support-digitising-european-industry-initiative

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Special attention is dedicated to SMEs (examples)

ICT-13-2018-2019: Supporting the emergence of data markets and the data economy

Specific Challenge: The lack of trusted and secure platforms and privacy-aware analytics methods for secure sharing of personal data and proprietary/commercial/industrial data hampers the creation of a data market and data economy by limiting data sharing mostly to open data. This need strongly emerges from recent evidence from stakeholders, both for personal data platforms[22] and for industrial data platforms.[23,24,25] The lack of ICT and Data skills seriously limits the capacity of Europe to respond to the digitisation challenge of industry. Specific attention needs to be put in involving SMEs and give them access to data and technology. IT standardisation faces new challenges as technologies converge and federated systems arise, creating new gaps in interoperability.

ICT-49-2020: Artificial Intelligence on demand platform

Specific Challenge: The challenge is to fully exploit the potential of AI in the economy and society. Building notably on Europe's Scientific and Technology strengths in the field, the supported activities should reinforce industrial competitiveness across all sectors including for SMEs and non-tech industries and help address societal challenges (e.g. ageing, transport, gender equality). The ambition is to bring AI technologies and resources to integrators and innovators in all sectors and actively engage with a wide user community, to foster adoption of AI, via use-cases experiments.

Priority 3: Societal Challenges

- Why?
  - Europe is facing some challenges
  - Aged population
  - Urban areas
  - Smart mobility
  - Quality of life (e.g. poverty, food, etc.)
  - …
- How
  - Top down approach

Societal Challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture, marine and maritime research & the bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Inclusive, innovative and reflective societies
- Security society

Is there anything focussed on SMEs?

Definition of SME

La definizione di PMI utilizzata dalla Commissione (da 01/01/2005):

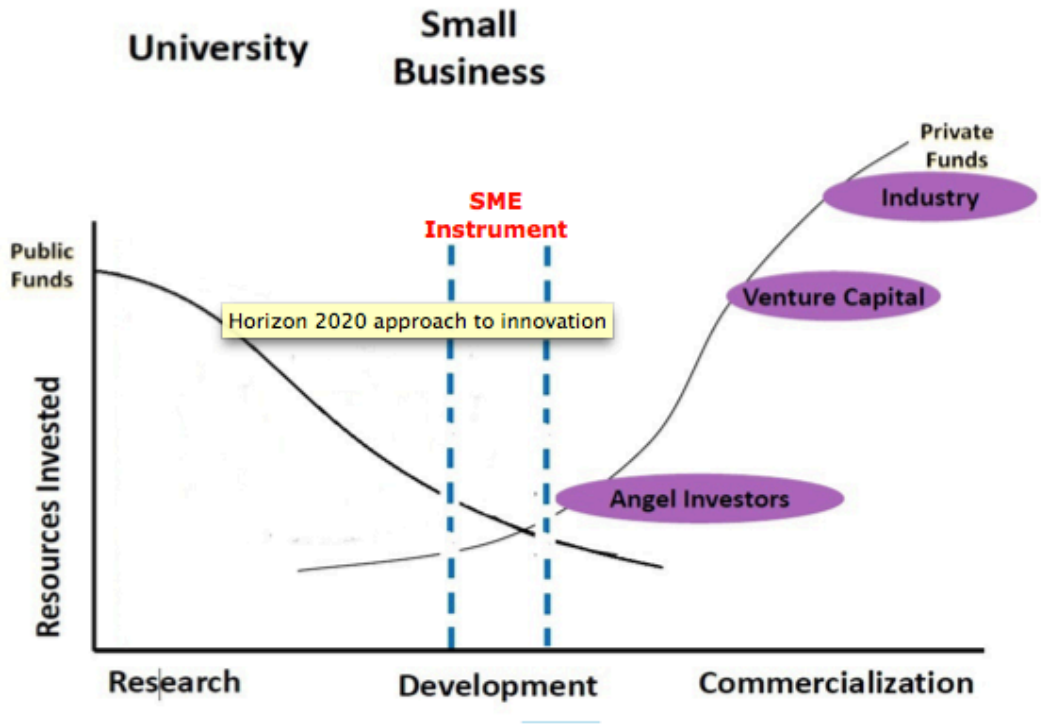
- **Impegnata in una attività economica**
- **< 250 addetti**
- **Fatturato annuo di ≤ € 50 Milioni oppure un bilancio totale di ≤ € 43 Milioni**
- **Autonoma**

Definizione:

http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm

Guida alla nuova definizione:
http://ec.europa.eu/enterprise/enterprise_policy/sme_definition/sme_user_guide_it.pdf

SME dedicated Funding Program: EIC Accelerator Pilot (SME Instrument)



SME dedicated Funding Program: EIC Accelerator Pilot (SME Instrument)

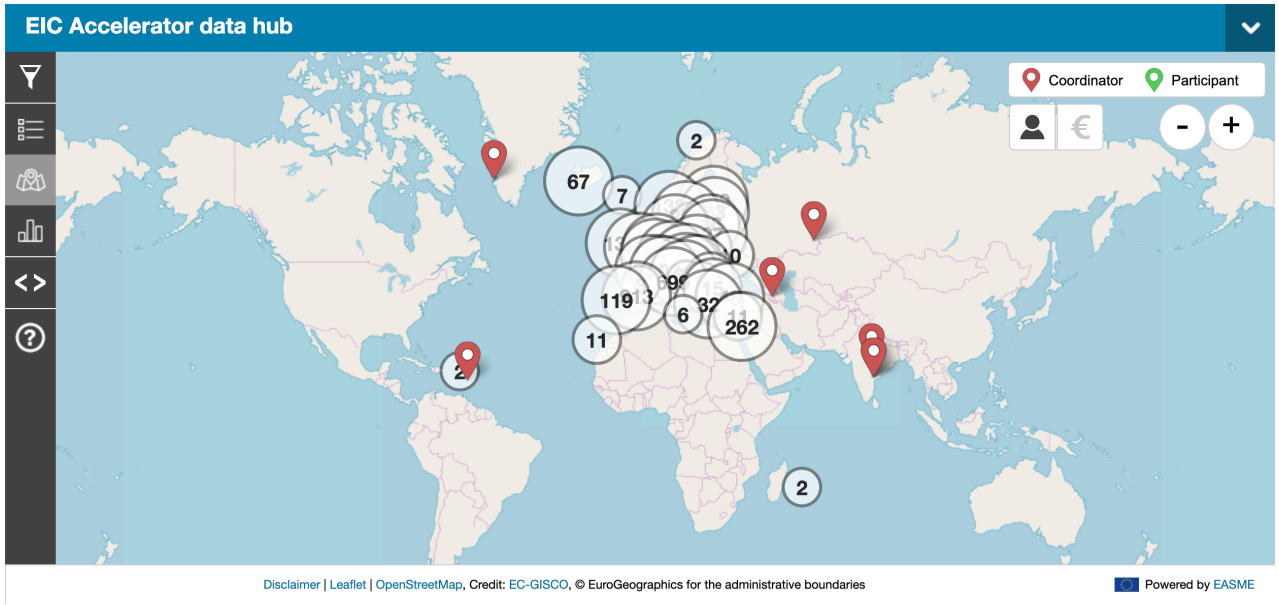
- Since the start of the programme in 2014 the EIC Accelerator pilot has helped over 4.400 companies get a head start in the race to the market. The programme offers up to € 2.5 million in funding, innovation coaching and business acceleration services.
- More than two-thirds of the companies have placed their product on the market, since they received support from the EIC pilot. 17 companies float on the stock exchange market, 33 have been acquired and a total of € 3 billion of extra private follow-up investment has been leveraged.
- Over 75% of the companies funded have increased their operating revenues. Companies have also grown in size as around 67% of them have increased their headcount since the grant.

Pay attention to …

Table 3.4 Common pitfalls in business plans

Market	Value propositon	Channel to market (CM)	Financial forecasts
"There are no competitors for this product/service" If there is no competition, there may be no customers.	Unsolved but small problem being addressed; that is, not a significant investment opportunity, but suitable lifestyle business?	Access to customer difficult. CM not available unless business builds it; channel occupied by competitor(s).	Assumptions upon which financials are based are not clear or realistic (given market conditions).
Good identification of opportunity, but assessment of customer segment is weak.	More than one business model; business trying to solve too many pain points.	Market entry strategy unrealistic, not novel to stimulate interest in product/service.	Sales growth shows growth in margins (unlikely if market highly competitive and price sensitive).
Using a "percentage of market capture" forecast, for example, "We only need 1% of this $200million market."	Product too immersed in "deep science"; pathway to market product unclear; that is, is this a tech. solution or business solution?	No clear "scale-up" strategy required for business growth.	Working capital will grow proportionally to growth in sales (must account for credit terms to customers and suppliers).

SME Instrument (EIC Accelerator Pilot) funded projects



https://sme.easme-web.eu/

And now?
Towards Horizon Europe

Steps towards the first Horizon Europe work programme

Early involvement and exchanges with Member States, consultation with stakeholders and the public at large
Establishment of Mission Boards

Co-creation at Research & Innovation Days 24 – 26 September.
Extensive exchanges with the new European Parliament.
Establishment of new Commission - envisaged endorsement of Strategic Plan

Drafting of first Horizon Europe Work Programme on the basis of the Strategic Plan

Start of Horizon Europe

Our vision

A sustainable, fair and **prosperous** future for **people** and **planet** based on European values.

- Tackling **climate change** (35 % budgetary target)
- Helping to achieve **Sustainable Development Goals**
- Boosting the Union's **competitiveness and growth**

Credits: https://www.un.org/sustainabledevelopment/sustainable-development-goals/

Horizon Europe: Preliminary structure

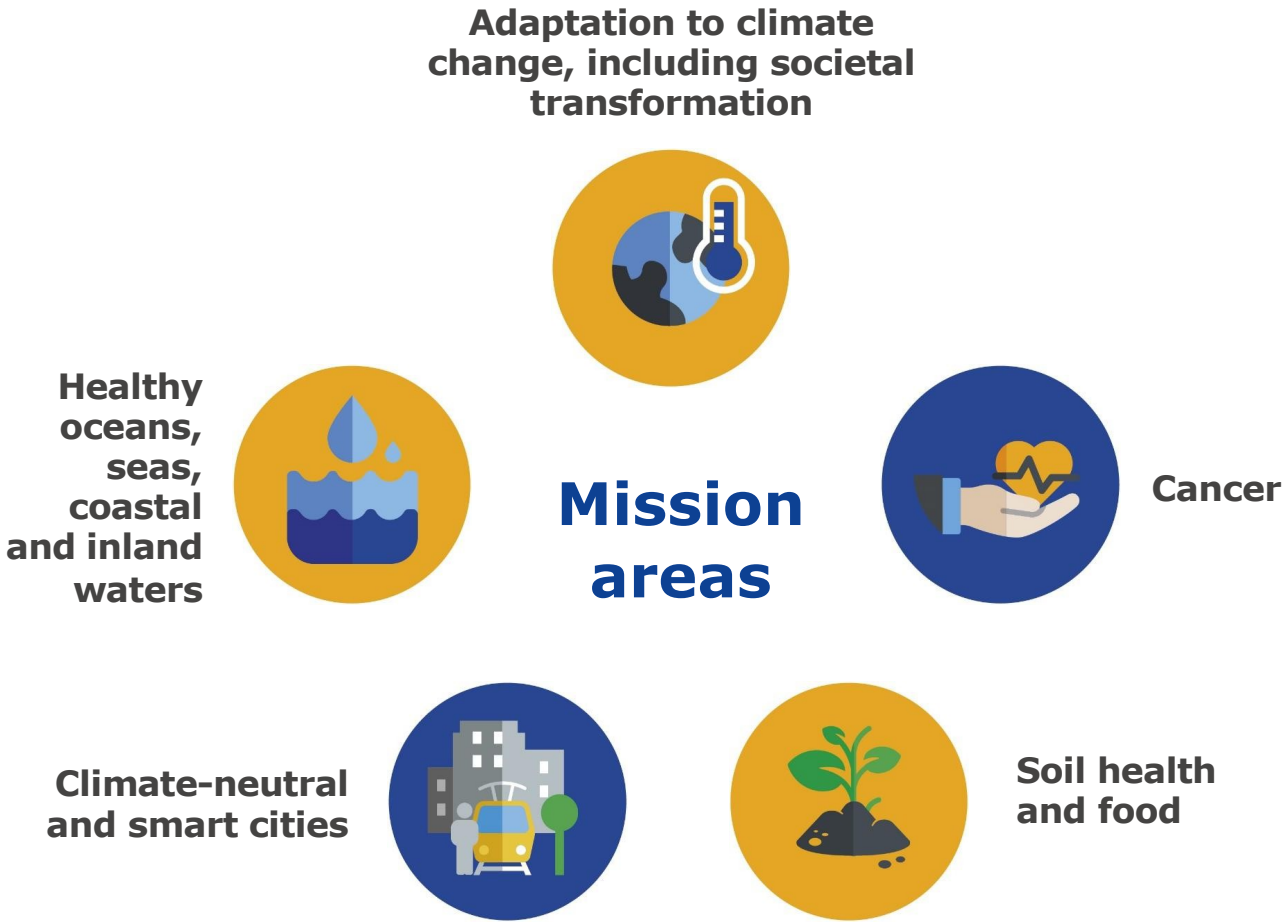
R&I Missions

R&I Missions

Relating EU's research and innovation better to society and citizens' needs; with strong visibility and impact

A mission is a portfolio of actions across disciplines intended to achieve a **bold and inspirational and measurable goal** within a set timeframe, with **impact** for society and policy making as well as relevance for a significant part of the European population and wide range of European citizens.

Horizon Europe defines mission characteristics and elements of governance, and 5 missions areas.
Specific missions will be programmed within the Global Challenges and European Industrial Competitiveness pillar (drawing on inputs from other pillars)



European Commission

Some useful links

- European Commission Funding and Tenders Portal
  - https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-search;freeTextSearchKeyword=;typeCodes=0,1;statusCodes=31094501,31094502,31094503;programCode=null;programDivisionCode=null;focusAreaCode=null;crossCuttingPriorityCode=null;callCode=Default;sortQuery=submissionStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState

- Services supporting search for funding/calls
  - https://euroalert.net/calls/all
  - https://www.welcomeurope.com/understand-european-funds.html
  - https://www.euresearch.ch/en/euresearch-services/we-inform/newsletter/archive/e-alerts/
  - https://www.up2europe.eu/calls/?up=1&d=

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I finanziamenti europei per le PMI: opportunità e sfide

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