

38th INTERNATIONAL CAE CONFERENCE

**METAMORPHOSIS
TO FULL DIGITAL
MASTERY**

Successful transition through
artful technology deployment

16-18

NOVEMBER 2022



MANUFUTURE 2030

Vision, Strategy and Action Plan

***ASSURING THE FUTURE OF A COMPETITIVE,
SUSTAINABLE AND RESILIENT EUROPEAN
MANUFACTURING***

Maurizio Gattiglio

Chairman MANUFUTURE ETP High Level Group

Importance of Manufacturing Industry for Europe as a guarantor for prosperity, innovation and jobs

Manufacturing plays a central role in Europe's economy
Production of goods combined with high-quality services

EU Manufacturing

€7 trillion
turnover

30 million
direct jobs

60 million
indirect jobs

80% of total
EU exports



ENM stakeholder meeting 2021-10-11



HORIZON EUROPE 100 B€ investments in R&I from 2021 to 2027



Overview of 49 European Partnerships

PILLAR II - Global challenges & European industrial competitiveness

CLUSTER 1: Health	CLUSTER 4: Digital, Industry & Space	CLUSTER 5: Climate, Energy & Mobility	CLUSTER 6: Food, Bioeconomy, Agriculture, ...
Innovative Health Initiative	Key Digital Technologies	Clean Hydrogen	Circular Bio-based Europe
Global Health Partnership	Smart Networks & Services	Clean Aviation	Rescuing Biodiversity to Safeguard Life on Earth
Transformation of health systems	High Performance Computing	Single European Sky ATM Research 3	Climate Neutral, Sustainable & Productive Blue Economy
Chemicals risk assessment	European Metrology (Art. 185)	Europe's Rail	Water4All
ERA for Health	AI-Data-Robotics	Connected and Automated Mobility (CCAM)	Animal Health & Welfare*
Rare diseases*	Photonics	Batteries	Accelerating Farming Systems Transitions*
One-Health Anti Microbial Resistance*	Made in Europe	Zero-emission waterborne transport	Agriculture of Data*
Personalised Medicine*	Clean steel – low-carbon steelmaking	Zero-emission road transport	Safe & Sustainable Food System*
Pandemic Preparedness* <i>Co-funded or co-programmed</i>	Processes4Planet	Built4People	
	Global competitive space systems**	Clean Energy Transition	
		Driving Urban Transitions	

- Institutionalised Partnerships (Art 185/7)
- Institutionalised partnerships / EIT KICs
- Co-Programmed
- Co-Funded

* Calls with opening dates in 2023-24

** Calls with opening dates not before 2022

PILLAR III - Innovative Europe

EIT	SUPPORT TO INNOVATION ECOSYSTEMS
InnoEnergy	Innovative SMEs
Climate	
Digital	
Food	
Health	
Raw Materials	
Manufacturing	
Urban Mobility	
Cultural and Creative Industries	

CROSS-PILLARS II AND III

European Open Science Cloud

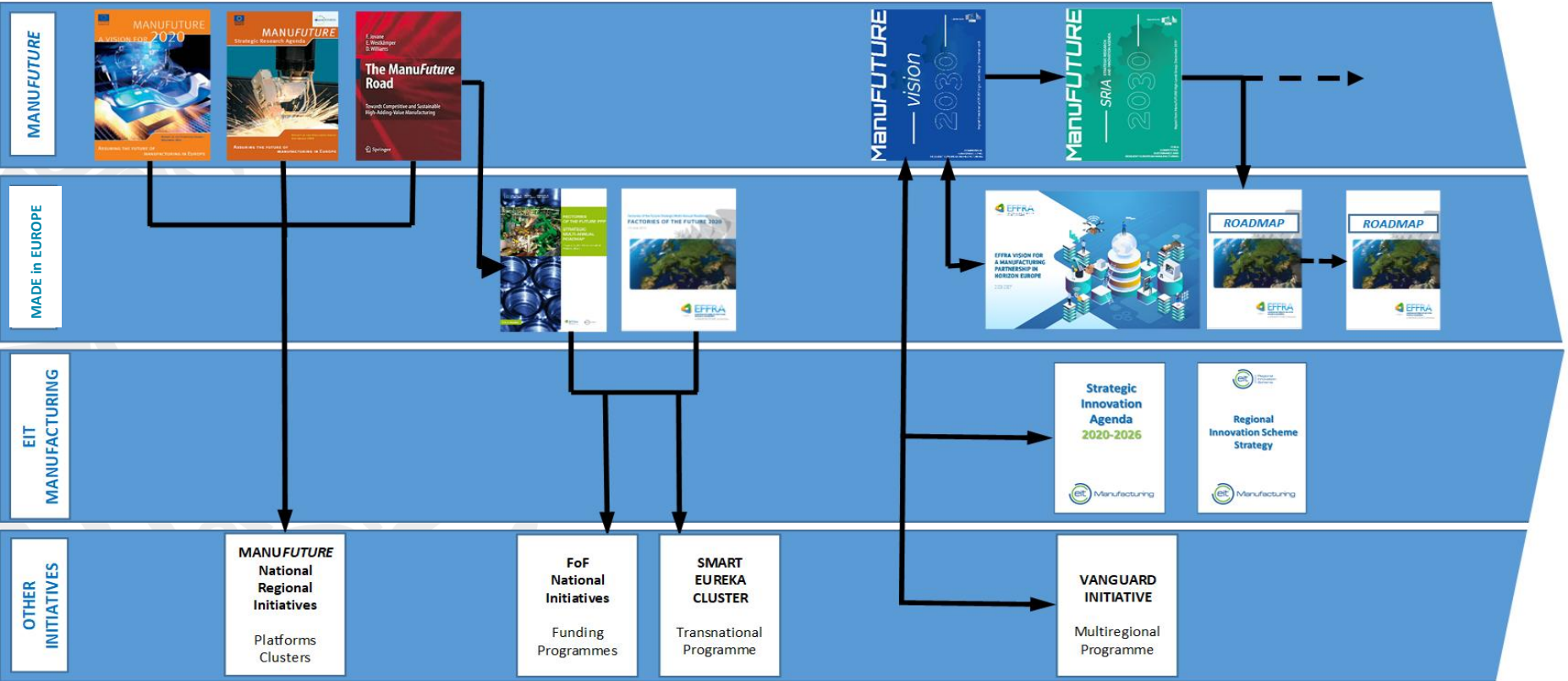


ManuFUTURE 18 Years of „Strategic Intelligence“

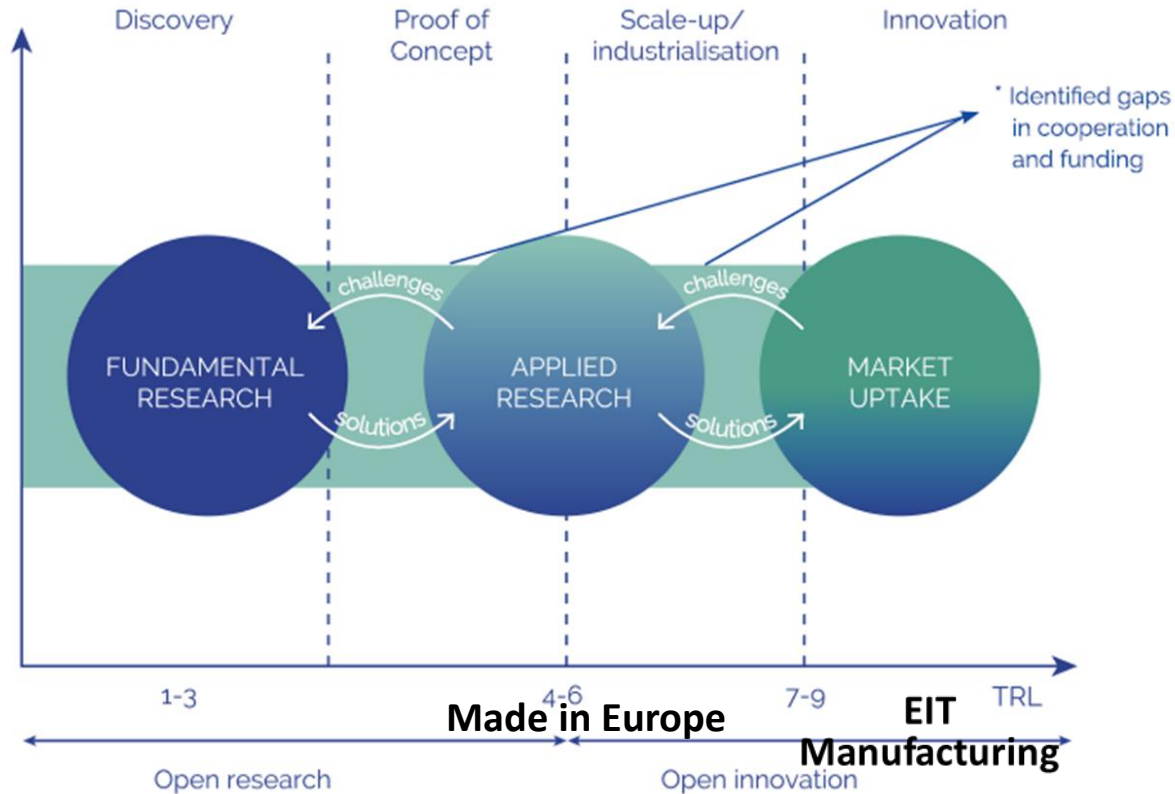


2004

2022



The Innovation Process





EIT Manufacturing vision

Global manufacturing innovation is led by Europe.



EIT Manufacturing mission

Bring together manufacturing actors across Europe to integrate innovation and education for an entrepreneurial and sustainable Europe.

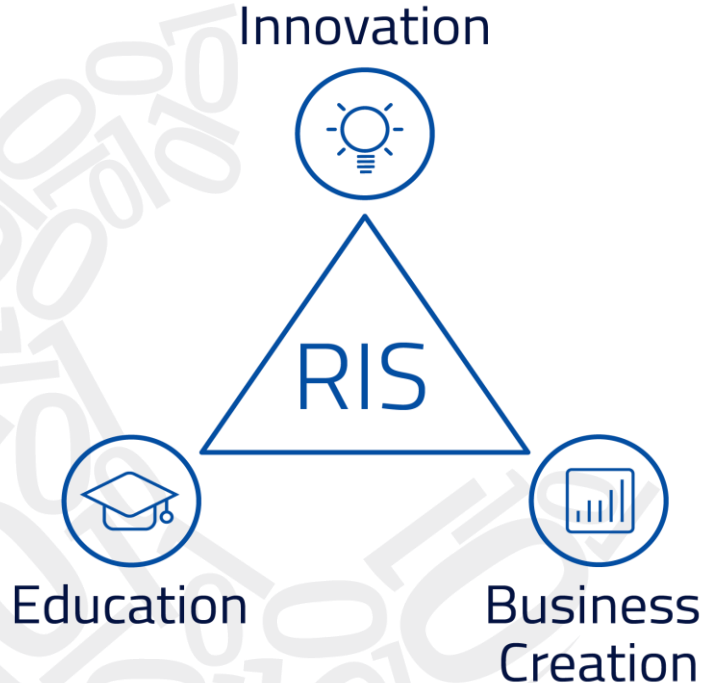
EIT Manufacturing Unique approach: Innovation based on industry needs

- European Public-private partnership
- A holistic, tested method
- Focus on solutions to high-value manufacturing challenges
- 80+ full members, 50+ activity partners: leading companies, universities and research organisations
- €400M budget until 2026



EIT Manufacturing – How We Do It

Our Approach



Our flagships – Four focus areas



Flexible production systems for competitive manufacturing



Low environmental footprint systems & circular economy for green manufacturing



Digital & collaborative solutions for innovative manufacturing ecosystems



Human-machine co-working for socially sustainable manufacturing

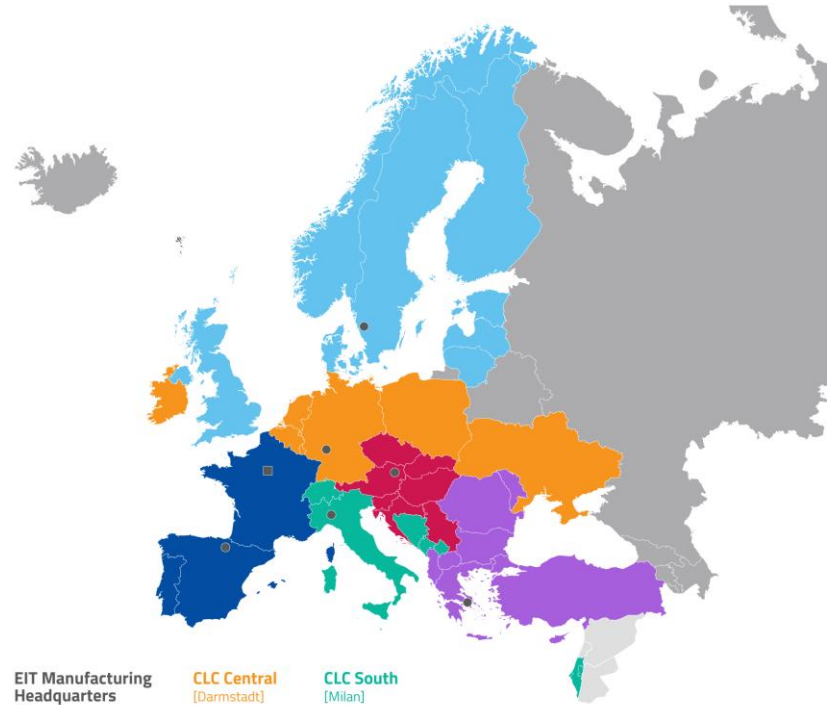
Locations: connecting key Manufacturing & Innovation Hubs

Legal Entity **France**

Headquarters **Paris**

6 Co-location Centers (CLCs)

- **San Sebastian** Spain
- **Gothenburg** Sweden
- **Darmstadt** Germany
- **Milan** Italy
- **Vienna** Austria
- **Athens** Greece



EIT Manufacturing
Headquarters
Paris

CLC Central
[Darmstadt]

CLC South
[Milan]

CLC West
[San Sebastian]

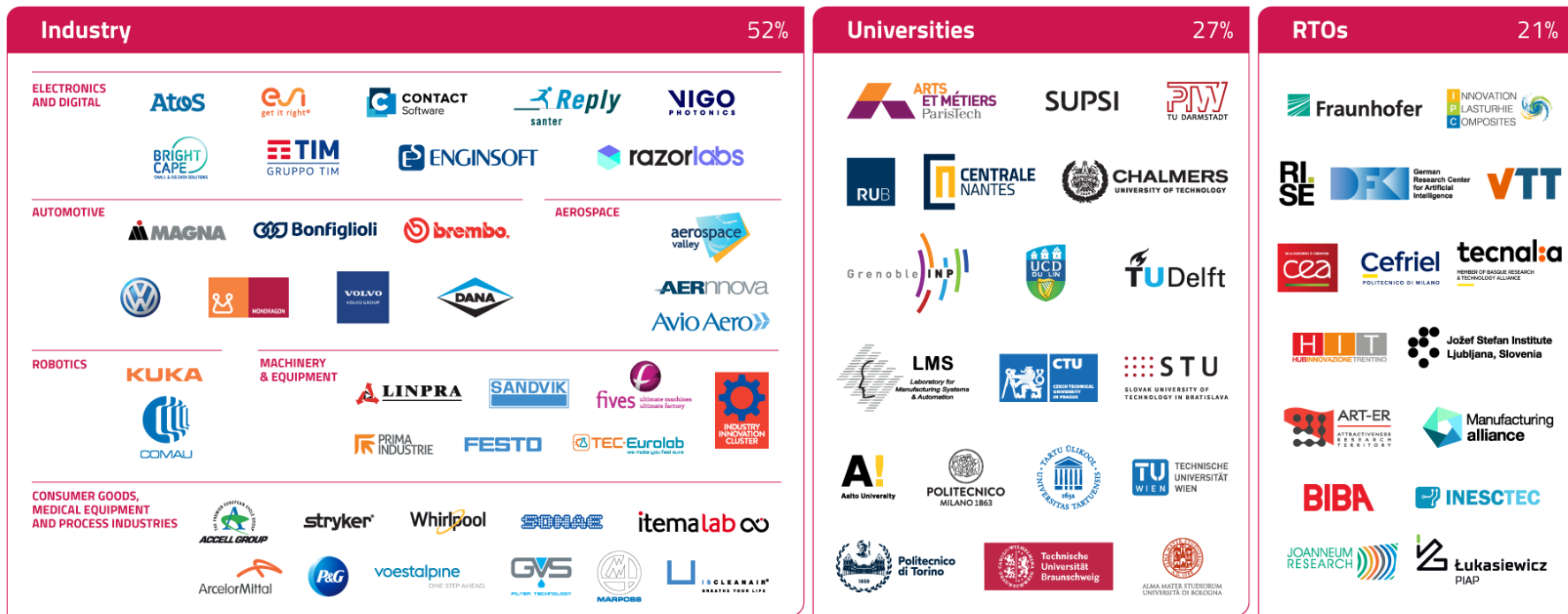
CLC North
[Gothenburg]

CLC East
[Vienna]

CLC South-East
[Athens]

*In addition, dynamically
growing number of RIS hubs*

Powerful partnership: 80+ partners from 18 countries



As of March 2022



European Commission
&
Member States



European Factories of the
Future Research
Association



Factories of the Future
Public Private Partnership
2010-2020



2021-2027

900 M€ program
in 7 year

MIE General objectives

Manufacturing competitiveness

Leadership & manufacturing excellence, generating new products and new markets

European Green Deal

Circular and climate-neutral manufacturing

An Economy that Works for People and SMEs

Attractive added value manufacturing jobs

A Europe Fit for the Digital Age

Digital transformation of manufacturing industry, trusted and robust

MIE Specific Objectives

- **Excellent, responsive and smart factories & supply chains**
- **Circular products & Climate-neutral manufacturing**
- **New integrated business, product-service and production approaches; new use models**
- **Human-centered and human-driven manufacturing innovation**

MiE Key Technologies and Enablers

- **Advanced and smart material processing technologies and process chains, including recycling and remanufacturing**
- **Smart mechatronics, robotics and logistic technologies**
- **Data analytics and (cognitive) artificial intelligence; Simulation and modelling, digital twins**
- **Digital platforms and data sharing solutions, robust and secure industrial communication technologies**
- **New business models, manufacturing organisation approaches and human-centred science and innovation approaches**
- **Standards**



Made in Europe Partnership: New Call Topics (official end of November 2022)

Work Programme 2023-2024

+ One additional call topic not under Made in Europe, but co-shaped by EFFRA:

HORIZON-CL4-2023-HUMAN-01-53: Localised and Urban Manufacturing, supporting creativity and the New European Bauhaus

2023 Deadline: 20th April 2023	HORIZON-CL4-2023-TWIN-TRANSITION-01-02: High-precision OR complex product manufacturing – potentially including the use of photonics (IA)
	HORIZON-CL4-2023-TWIN-TRANSITION-01-04: Factory-level and value chain approaches for remanufacturing (IA)
	HORIZON-CL4-2023-TWIN-TRANSITION-01-07: Achieving resiliency in value networks through modelling and Manufacturing as a Service (RIA)
	HORIZON-CL4-2023-TWIN-TRANSITION-01-08: Foresight and technology transfer for Manufacturing As A Service (CSA)
2024 Deadline: 7th February 2024	HORIZON-CL4-2024-TWIN-TRANSITION-01-03: Manufacturing as a Service: Technologies for customised, flexible, and decentralised production on demand (RIA)
	HORIZON-CL4-2024-TWIN-TRANSITION-01-05: Technologies/solutions to support circularity for manufacturing (RIA)
2024 (Two Stage Call) First deadline: 7 th February 2024 Second deadline: 24 th September 2024	HORIZON-CL4-2024-TWIN-TRANSITION-01-01 (Two stages): Bio-intelligent manufacturing industries (RIA)

MAIN FIGURES

(Applicable only to draft Made In Europe calls)

2023	2024	2024 Two Stages
4 Call Topics	2 Call Topics	1 Call Topic
Deadline: 20 th April 2023	Deadline: 7 th February 2024	First deadline: 7 th February 2024 Second deadline: 24 th September 2024
Total budget: 102 million	Total budget: 71 million	Total budget: 25 million
Total number of projects to be funded: 20	Total number of projects to be funded: 11	Total number of projects to be funded: 5

+ One additional call topic not under Made in Europe, but co-shaped by EFFRA – HORIZON-CL4-2023-HUMAN-01-53: Localised and Urban Manufacturing, supporting creativity and the New European Bauhaus – Budget: 10 Million – Deadline 28th March 2023

ManuFUTURE Open organisation



ManuFuture HLG

**MF
Implementation
Support Group**

HLG
Sherpas

+ WGs

**MF
NRTP Group**

National and
Regional
Technology
Platforms

**MF
Sub-Platforms**

+
Cross Sectorial
Activities/ETP-
Relations

**MF
Industrial
Advisory
Group**

CEOs/CTOs

ManuFUTURE ETP – *A provider of strategic intelligence*

➤ **ManuFUTURE HLG (High Level Group)**

Discusses the results of Implementation Support Group proposals, and takes final decisions on next steps and how to move forward.

➤ **ManuFUTURE ISG (Implementation Support Group)**

Develops the relevant topics for European Manufacturing on behalf of the HLG to the decision stage.

➤ **ManuFUTURE Sub-Platform and ETP Coordination**

Coordinates the contacts to the several thematic Sub-Platforms and other related ETPs.

➤ **ManuFUTURE NRTP Group (NRTP = National and Regional Platforms)**

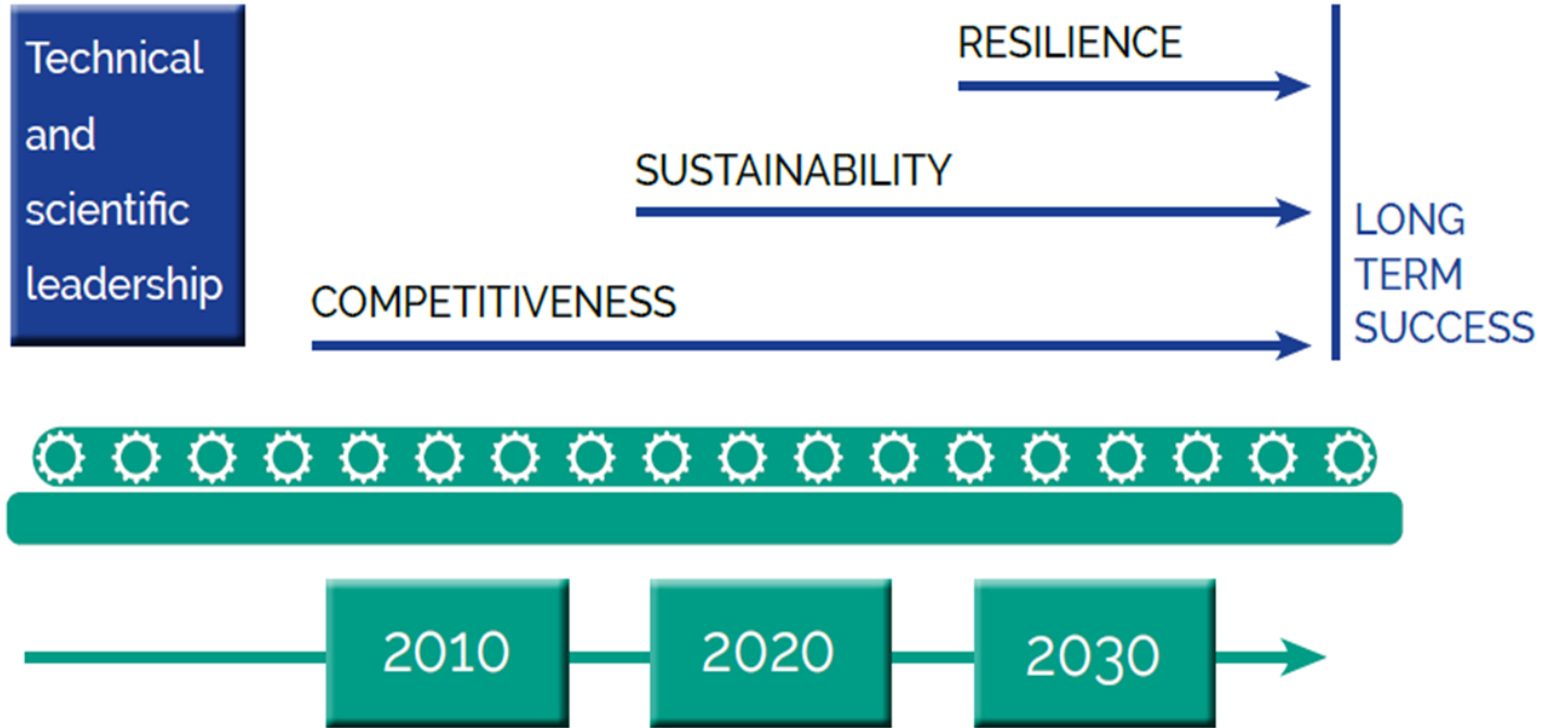
Collects ideas of national and regional ManuFUTURE initiatives, and disseminates successful ideas across the membership (28 NRTPs).

ManuFUTURE European Technology Platform

ManuFUTURE from Vision 2030 via Strategic Research and Innovation Agenda 2030 (SRIA) to Implementation



ManuFUTURE Vision 2030



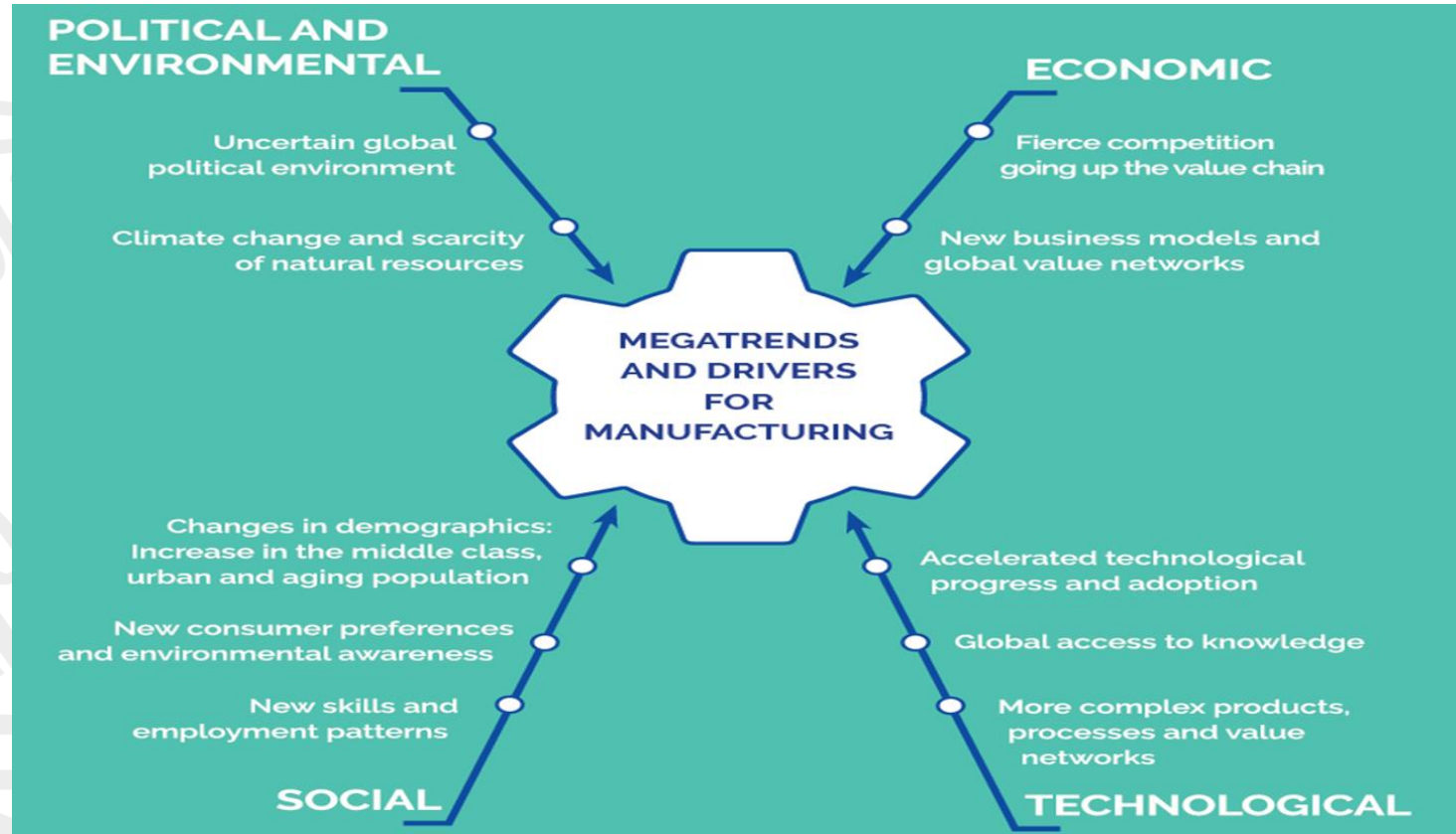
ManuFUTURE Strategy for 2030



Europe needs to build on its proven capabilities and **invest more to ensure its leadership**

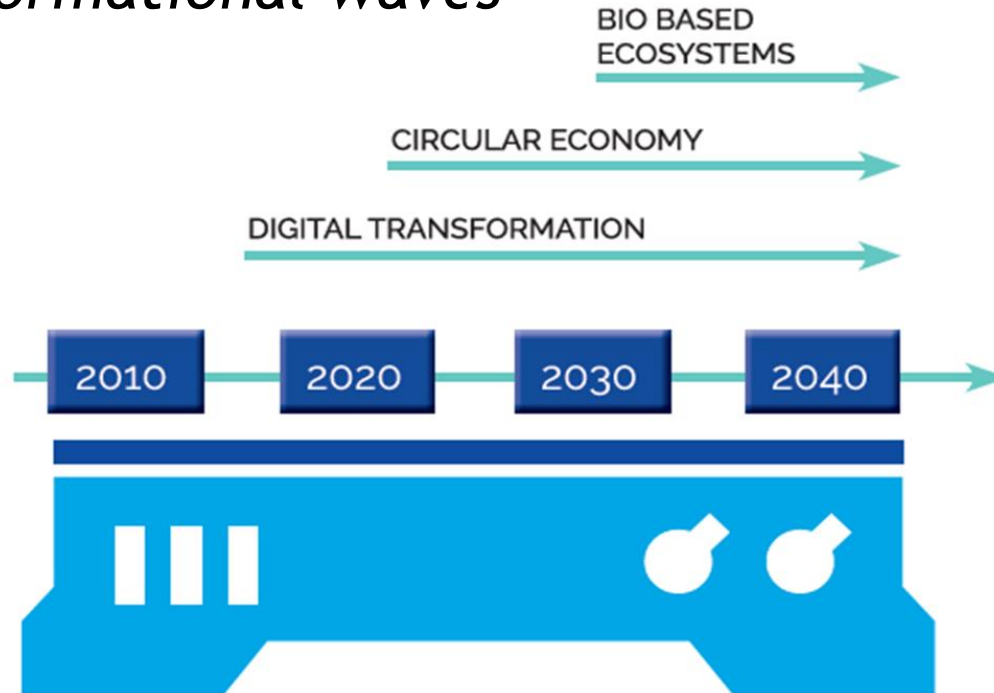


Megatrends and Drivers for Manufacturing



Implementation Roadmap

Three transformational waves



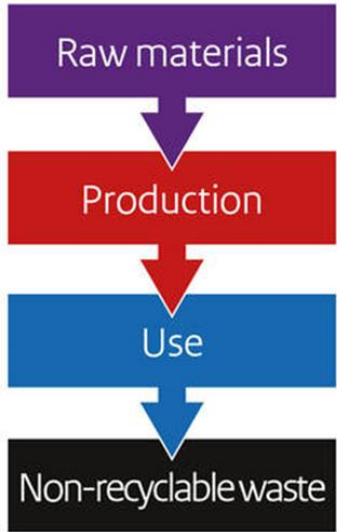
Production requirements continue to increase

Manufacturing will be the engine of the new low-carbon, resource-efficient and knowledge-based economy. Manufacturing is part of the solution not of the problem

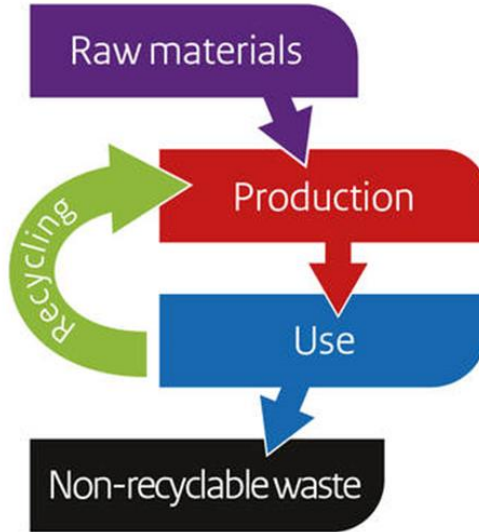


From a linear to a circular economy

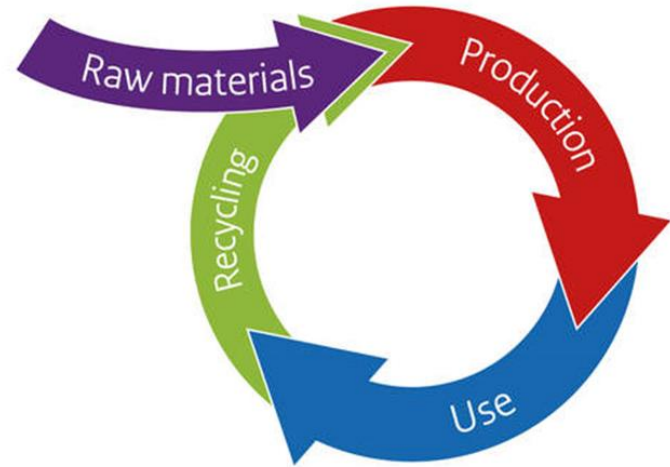
Linear economy



Reuse economy



Circular economy



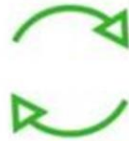
A sustainable world does not mean a drop in the quality of life for consumers, and can be achieved without loss of revenue or extra costs for manufacturers. The argument is that circular business models can be as profitable as linear models, allowing us to keep enjoying similar products and services.

Circular Economy

16 Principles For a Circular Economy:



1. Design with a purpose
2. Design for longevity



3. Design for resource efficiency
4. Design for biodegradability
5. Design for recyclability



6. Source/produce more locally
7. Source/produce more without toxicity



8. Source/produce with efficiency
9. Source/produce with renewables



10. Source/produce with good ethics
11. Provide services to support long life



12. Reuse, recycle and compost all remains
13. Collaborate well and widely



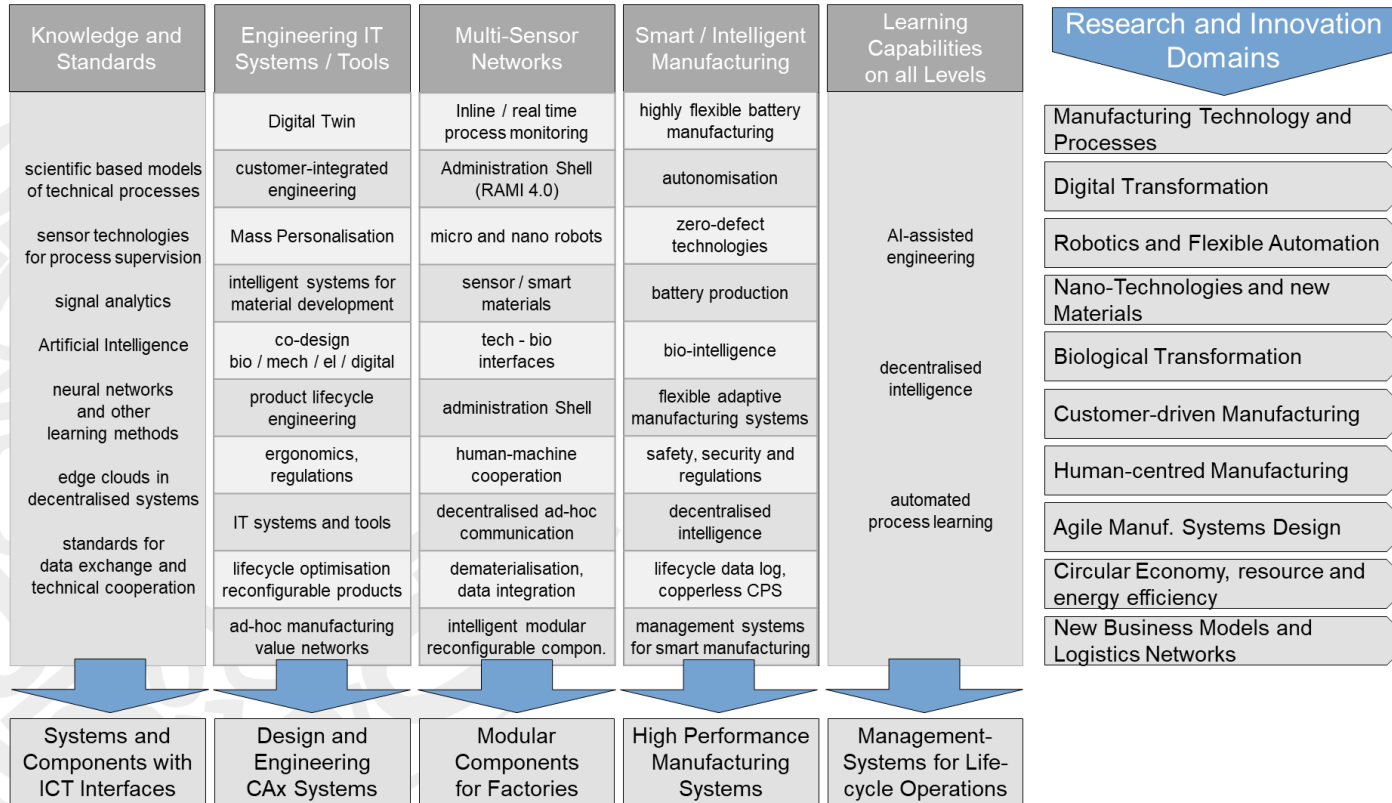
14. Use, wash and repair with care
15. Consider rent, loan, swap, second-hand or redesign
16. Buy quality as opposed to quantity

MANUFUTURE SRIA 2030 Proposed Research and Innovation Domains

ENABLING TECHNOLOGIES AND APPROACHES	MANUFACTURING STRATEGIES
1. Manufacturing technology and processes	6. Customer-driven manufacturing
2. Digital transformation	7. Human-centred manufacturing
3. Robotics and flexible automation	8. Agile manufacturing systems design and management
4. Nanotechnology and new materials	9. Circular economy, resource and energy efficiency
5. Biological transformation of products, processes and value creation	10. New business models and logistics networks

- Each domain generates an average of 10 sub-topics
- Sub-topics cover frontiers' research, applied research and demonstrators and pilot lines
- Sub-topics are cross sectorial, but some sectorial challenges are also considered

Road towards technical intelligence



How to coexist competition and ethics in a challenging, selfish worldwide scenario ?



“*commoditization*” defined as the process by which goods that have economic value and are distinguishable in terms of attributes (uniqueness or brand) end up becoming simple commodities in the eyes of the market

source Wikipedia

The Challenge: How to ensure growth, jobs and prosperity?



**Growth, jobs
and prosperity
under pressure**



General Developments: „The new global disorder“

- Energy Scarcity & Soaring Prices
- Rising raw material prices and insecure supply of critical raw materials
- Deglobalisation / Restructuring of value chains
- Global Technology Race /Sovereignty/Strategic Value Chains
- Trend "Environmental Social Governance (ESG)"
- **Demographic change / Skills Shortage**
- **Reluctance to invest in Europe**

Some recommendations to overcome the problems

- Tax reduction for manufacturing workers, to increase attractiveness and help to solve the problems of shortage of skills, high direct taxes on jobs make them unattractive.
- Mobilization of private savings (very high in Italy) to support real economy development.
- Strengthen of State Aids measures, revision of the European "de minimis" rules to provide knowledge-intensive playing field in global competition.

Thank you

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