Intervento 1

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Manufacturing matters!

- **Manufacturing** is a main driver of industrial innovation, job creation and growth
- The **manufacturing industry** is a global base for prosperity and key to Europe's economic, social and environmental sustainability

Over 2.1 million manufacturing enterprises

16.1 % of the share of EU-28 GDP (2016)

32 million jobs (16% of the total EU working population)

Total turnover of EUR 7.11 trillion

Approx. 13 million jobs in the growing high-tech manufacturing industry

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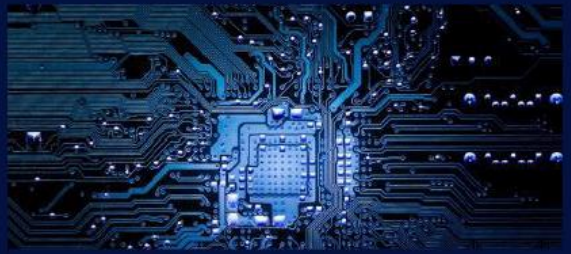
Shared challenges across Europe and the world



Digital transformation

Sustainability

Competition

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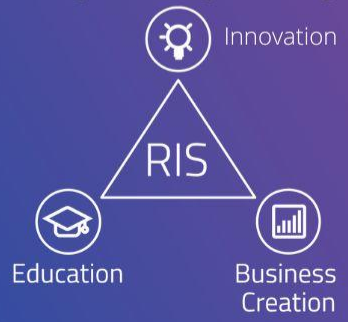
Vision & mission

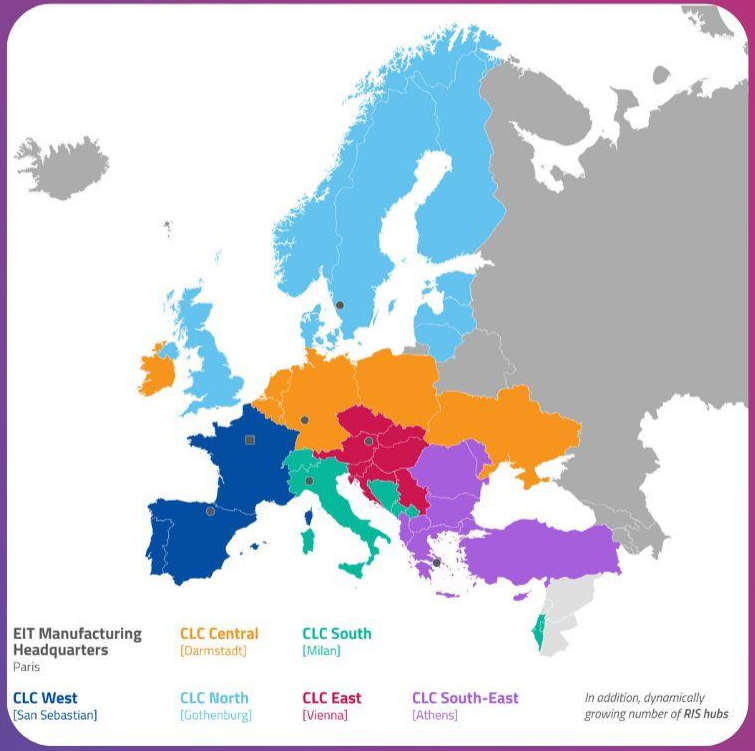
Global manufacturing innovation is led by Europe

Bring together manufacturing actors across Europe

85 Core Partners
58 Network Partners
11 RIS Hubs

Knowledge Triangle Integration





Four focus areas: The Flagships

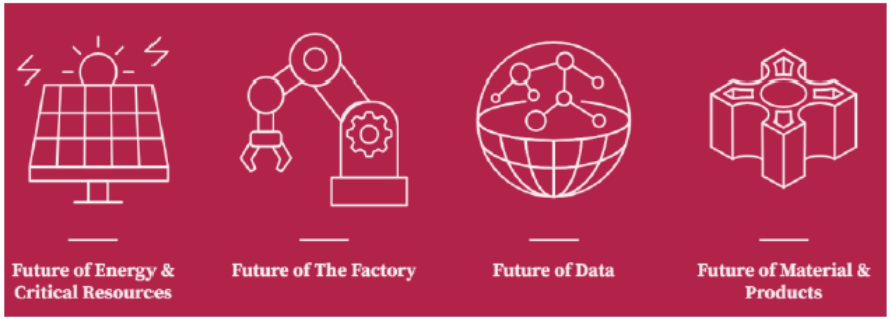
- **Flexible production systems** for competitive manufacturing
- **Digital & collaborative solutions** for innovative manufacturing ecosystems
- **Low environmental footprint** systems & circular economy for green manufacturing
- **Human-machine co-working** for socially sustainable manufacturing

Strategic Priorities

…to the Future European Manufacturing System

4 pillars of change
(foundational enablers of change)

4 spheres of action
(applied enablers of change)



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Transitioning to Sustainable Practice

Sustainability as the Goal and not the By- Product

While I4.0 has the potential to support sustainability performance - this is not a given, with the risk of increased waste production and higher energy demand. Now it **is necessary to build direct links between I4.0 and its impact on the Sustainable Development Goals**.

Systemic Development of Circular Economy Operations

I4.0 approaches can support CE aspects such as better transparency and decision- making, improved cost and flexibility, eco- design, added business value, reverse logistics and extended product / material lifetimes. However, **further research and more action is needed** to achieve such sustainable operations in practice.

Future of Data

Training AI and its large machine learning models requires a lot of power. So we have to know **which kind of data we want, which kind of data** that we could share will help me or will also help the value chain.

Future of Energy & Critical Resources

Electrification of the manufacturing process could be an enabler for decarbonisation and ultimately support the transformation to fossil- free factories.

Green hydrogen can play a major role in reaching net- zero targets, particularly in sectors such as steel and chemical production

Future of Materials & Products

Driven by the circular economy, we see an ongoing **push from consumers and regulators** to move towards more **repairability** as part of the (product) experience and a possibility to put **remanufacturing** at the centre of the circular economy.

Bio- based materials offer alternatives to plastic and other well- known polluting materials

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Intervento 2

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Skill gap problem dimension

- Skills development is **one of the most pressing and timely challenges** of the manufacturing industry
- **2.6 million job vacancies** within manufacturing that cannot be filled in the years 2018 to 2028*
- **54%** of the global workforces urgently **need reskilling***
  - For the full European manufacturing workforce, a requirement of **9 million person-years of reskilling**

*Source: World Manufacturing Forum

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Strategic Priorities

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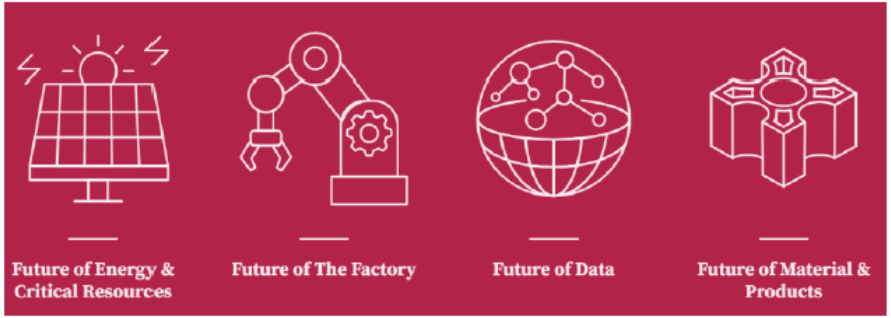

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EITM Education Programmes: Connecting people with competences

Empower

- EIT-labelled Masters programmes
- EIT-labelled PhD programme
- Flexible personalised empowering programmes

MASTER School

DOCTORAL School

SUMMER School

WINTER School

Connect & Transform

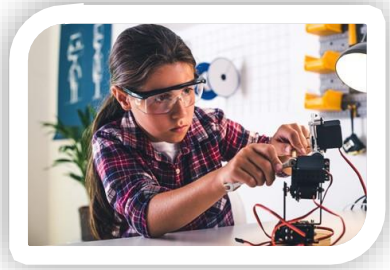
- Transform organisations through education & training
- Upskilling and re-skilling programmes for corporates

Skills .MOVE

T&LF
Teaching & Learning Factories Networks

Engage

- Attract young talent through networking, workshops and events
- Engage Women, Engage Pupils
- Cross-industry, societal engagement



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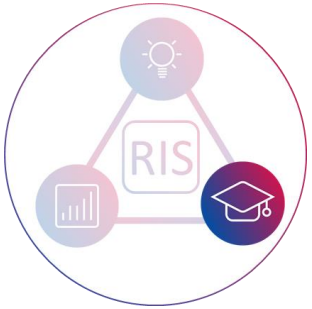
One example

V-Machina

V-MACHINA

Led by: SUPSI



Virtual reality nuggets:

- Lathe Machine
- Cobot
- Grinding Machine
- EDM Machine

Virtual Manufacturing Environment (VME):

The VME is designed to provide a platform where VR-based learning can be easily implemented

Human Activity Recognition:

For inferring users' emotional reactions to the interaction with M&R.

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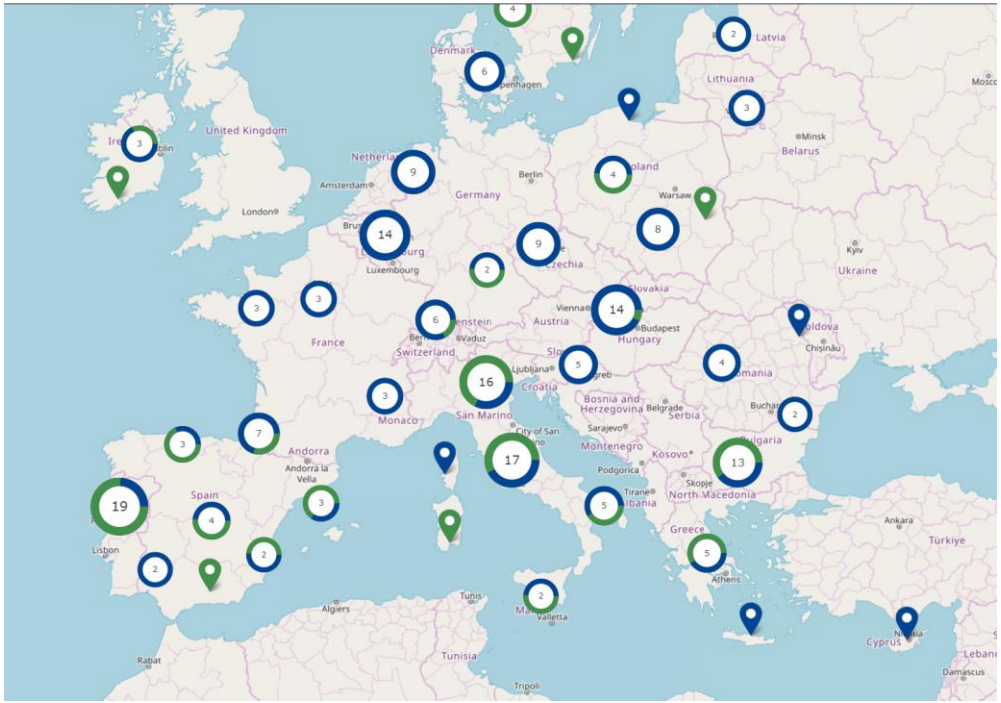
Rete dei Poli Europei di Innovazione Digitale (EDIH)

Obiettivo

Assicurare la transizione digitale dell'industria, con particolare riferimento alle PMI, e della pubblica amministrazione attraverso l'adozione di tecnologie digitali avanzate, quali intelligenza artificiale, calcolo ad alte prestazioni, cybersecurity.

Finanziati trami programmi **Digital Europe** e **PNRR in Italia**

- 228 in tutta Europa
- 37 in Italia:
    - 13 Poli vincitori co-finanziati dalla EC e dal MIMIT (PNRR)
    - 24 Seals of Excellence co-finanziatiati dal MIMIT (PNNR)



Servizi

- test e sperimentazione (testing before investing)
- **formazione e sviluppo delle competenze**
- sostegno all'accesso ai finanziamenti
- networking e accesso agli ecosistemi dell'innovazione

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DG CONNECT – Interactive Technologies, Digital for Culture and Education

Transforming digital experiences with XR and virtual worlds

- Encouraging applications across **sectors**
- Supporting wider **adoption**
- R&I meeting European **values**

Sectoral Data spaces

- **DS for Cultural Heritage** : bringing European CH into the digital age though advanced technologies, building on Europeana
- **DS for Media** : enabling media organisations to cooperate by sharing and accessing data
- **DS for Tourism** : preparatory action for data-driven tourism

Education and skills fit for the Digital Decade

- Fostering **European excellence** in education (HE,DEP, EdTech, Codeweek)
- **Data** for skills (Data Space for Skills, Digital skills & Jobs Platform)

XR2Learn (Horizon Europe)

Coordinator: CNIT - Consorzio Nazionale Interuniversitario Per Le Telecomunicazioni

XR2LEARN

EXTENDED REALITY FOR LEARNING IN NEW DIMENSIONS

XR2Learn will create a European reference platform on learning and teaching with XR (extended reality), establishing a cross-border innovation community (e.g. XR technology providers, application developers, end-users)

Key objectives:

- **Develop, apply and test the use of XR technologies** in education
- Provide **target user groups** with access to a **reference platform** for educational purposes
- Build a focal point where the **EdTech and XR community** can converge
- **Support start-ups, SMEs and industry** active in the XR sector - through cascade funding – in their go-to-market path
- **Reach out to potential user groups** (e.g. awareness-raising) and **link to existing relevant initiatives** (e.g. repositories)

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