REG LAB Annual Conference
Digital Transformation of SMEs

Copenhagen
31 May 2018

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DG for Internal Market, Industry, Entrepreneurship and SMEs

European Commission

EUROPEAN INDUSTRY AT A GLANCE

The **EU is a world leader** in many industrial sectors, such as pharmaceuticals, chemicals, mechanical engineering and fashion industries.

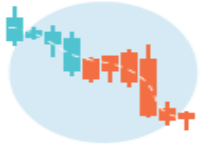
32 million people have a job in European industry.

Industry is recovering from the financial and economic crisis. **Over 1.5 million new jobs** have been created in industry since 2013.

About **17% of total value added** in the EU comes from manufacturing. **1 job** in manufacturing **creates up to 2.5 other jobs across the value-chain.**

Industry accounts for **68% of the EU's exports.**

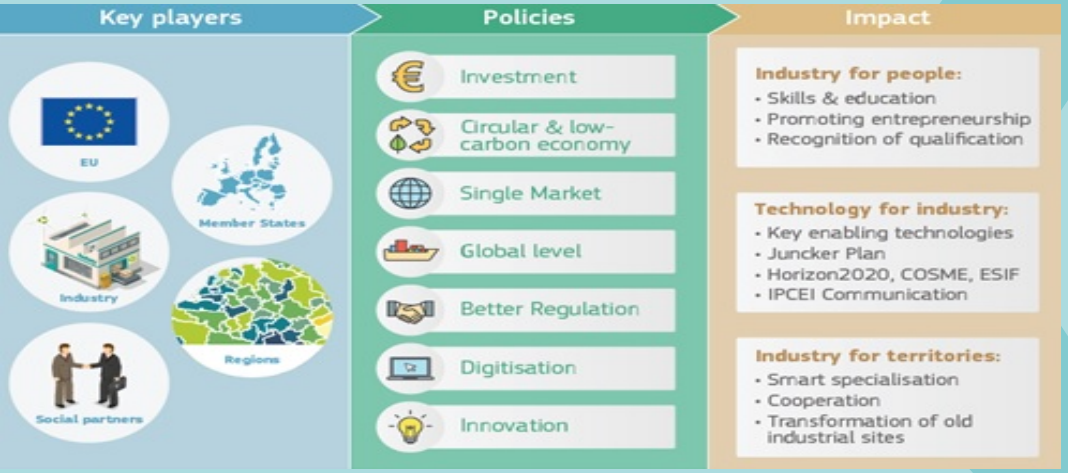
Industry is **undergoing a deep transfromation:** new technologies, need for greater resource efficiency, new business models, greater consumer demand for manufacturing activities being bundled with services.

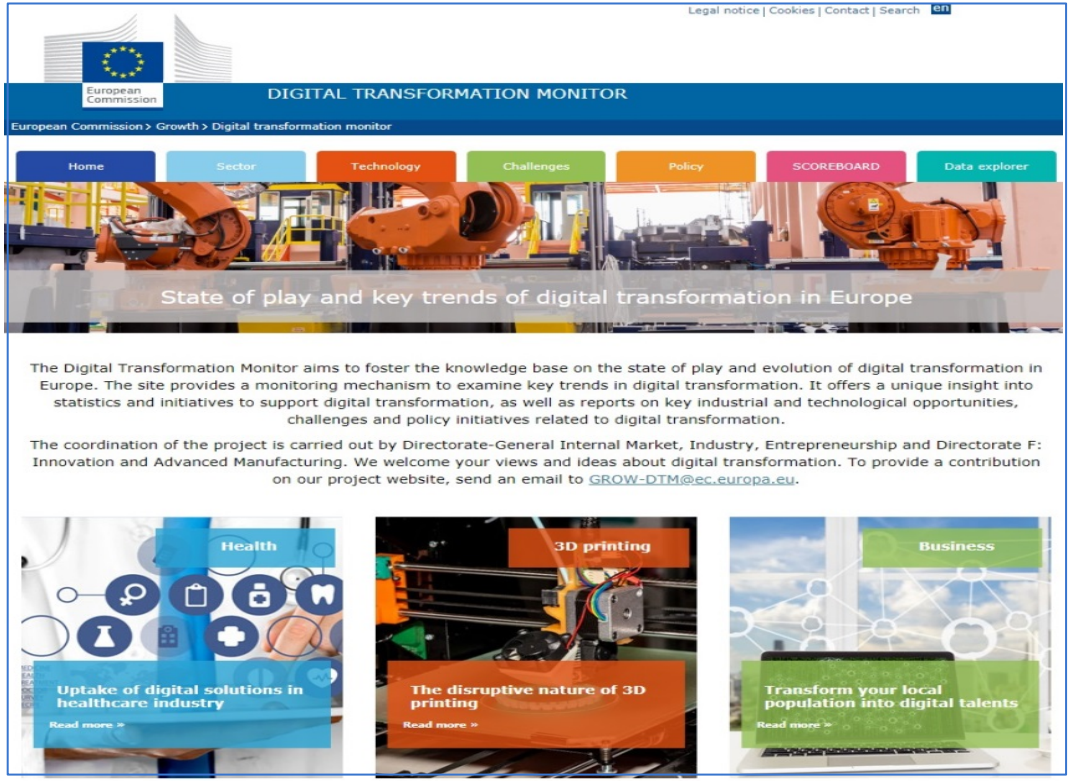


Since the financial crisis, the drop in investment is now reversing, but we still face a **shortage of ICT skills** and a growing **innovation gap** with South Korea and Japan.

Industrial Policy

Investing in a smart, innovative and sustainable Industry

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DIGITAL TRANSFORMATION MONITOR
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Data explorer
State of play and key trends of digital transformation in Europe
The Digital Transformation Monitor aims to foster the knowledge base on the state of play and evolution of digital transformation in Europe. The site provides a monitoring mechanism to examine key trends in digital transformation. It offers a unique insight into statistics and initiatives to support digital transformation, as well as reports on key industrial and technological opportunities, challenges and policy initiatives related to digital transformation.
The coordination of the project is carried out by Directorate-General Internal Market, Industry, Entrepreneurship and Directorate F: Innovation and Advanced Manufacturing. We welcome your views and ideas about digital transformation. To provide a contribution on our project website, send an email to GROW-DTM@ec.europa.eu.
Health
Uptake of digital solutions in healthcare industry
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3D printing
The disruptive nature of 3D printing
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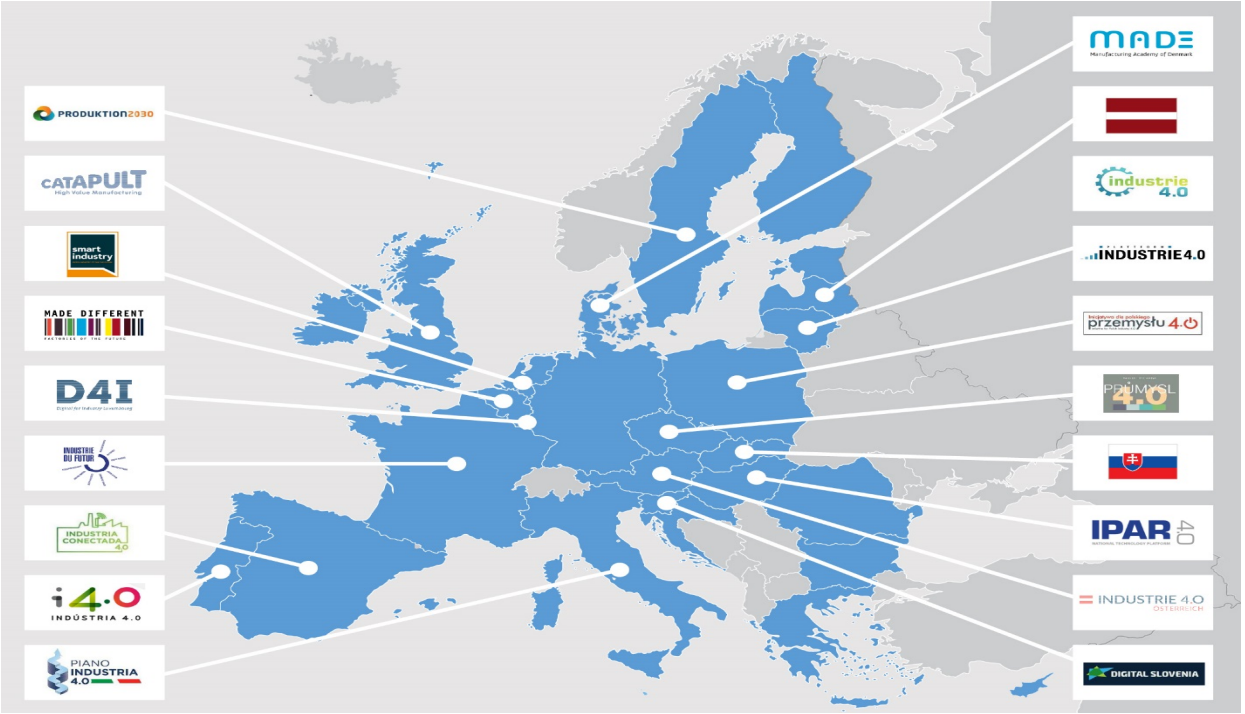
European Commission
Digital Transformation Scoreboard 2018
EU businesses go digital: Opportunities, outcomes and uptake
April 2018

National initiatives on industry digitisation

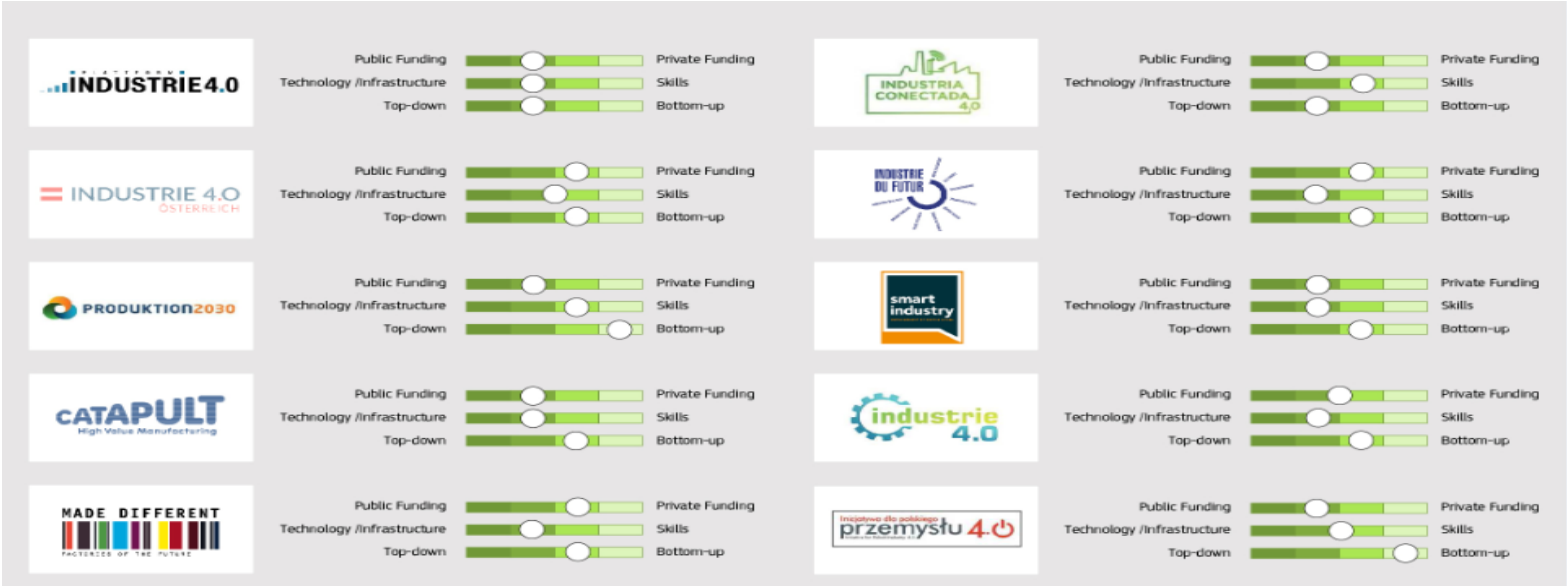


Source: Adapted from https://ec.europa.eu/digital-single-market/en/cordination-european-national-regional-initiatives

What was done in DTM?

- Coverage of 19 national industry digitisation initiatives of EU Member States launched 2011-2017
- Analysis of framework conditions for the design and rollout of industry digitisation policies, including:
  - Financing
  - Implementation strategy
  - Drivers and barriers
  - Achieved outputs and outcomes
  - Key policy lessons learned
  - Potential for scale-up and transfer

Main characteristics



Source: Own elaboration

Main characteristics

Source: Own elaboration

Main characteristics

	Budget	Strategic focus		Budget	Strategic focus
INDUSTRIE 4.0	2011-today **€200 million** (excl. financial in-kind contributions from industry)	Deployment	INDUSTRIA CONECTADA 4.0	2016 **€97.5 million**	Mixed
INDUSTRIE 4.0 ÖSTERREICH	**€500,000** annually	R&D	INDUSTRIE DU FUTUR	2014-2020 **Approx. €10 billion** (incl. loans & tax cuts)	Deployment
PRODUKTION2030	2013-2018 **Approx. €50 million** (incl. industry contributions)	Deployment	smart industry	2014-2017 **€25 million** (excl. industry co-financing)	Deployment
CATAPULT High Value Manufacturing	2012-2018 **€164 million** (incl. commercial income and collaborative R&D)	Deployment	industrie 4.0	2017-2020 **€79.8 million** (foreseen budget)	R&D
MADE DIFFERENT FACTORIES OF THE FUTURE	2016-2019 **€170,000** (Wallonia)	Deployment	przemysłu 4.0	2016-2040 **€235 billion** (based on Morawiecki Plan incl. EU funds)	Mixed

Source: Own elaboration

Main characteristics

	Budget	Strategic focus		Budget	Strategic focus
PRŮMYSL 4.0	Not yet defined	Mixed		2014-2020 **€6 billion** (incl. EU funds)	R&D
MADE Manufacturing Academy of Denmark	2014-2019 **€50 million** (incl. industry & RTO contributions)	Mixed		Not yet defined	R&D
IPAR 4.0 NATIONAL TECHNOLOGY PLATFORM	Not yet defined	Mixed	DIGITAL SLOVENIA	Not yet defined	R&D
PIANO INDUSTRIA 4.0	2017-2020 **Approx. €18 billion** (incl. tax incentives)	Deployment	D4I Digital for Industry Luxembourg	Not yet defined	Mixed
i4.0 INDÚSTRIA 4.0	2017-2020 **Approx. €4.5 billion** (total investment incl. industry contributions)	Deployment			

Source: Own elaboration

Lessons learned and policy-relevant conclusions

- Priority challenge: Tendency of policies to focus on infrastructure / technology rather than on the development of skills
- R&D vs. Deployment focus: Equal focus of R&D and deployment focus of initiatives
- Important role of industry and research stakeholders in designing and implementing national digitisation initiatives, e.g. in governance structures

  → 70% of initiatives are driven by domestic industry

  BUT: Only 15% are majority financed by industry

Lessons learned and policy-relevant conclusions

- Financing: Public funding dominates but co-financing by industry is either already happening or planned for the future - Membership fee financing on the rise
- Financial scale: Wide range of financial means allocated to digitisation initiatives

→ **BUT:** Comparisons can be misleading (!!) due to divergent methods to calculate the total budget and intransparent industry co- financing

- Lack of effective evaluation and monitoring tools – Only 1/19 examined initiatives subject to in-depth evaluation
- Tangible impacts achieved by 1/3 of initiatives, intangible ones acieved by almost all policies; **BUT:** Recent launch date (!!)

Focus on investments:
Smart Specialisation Platform for Industrial Modernisation

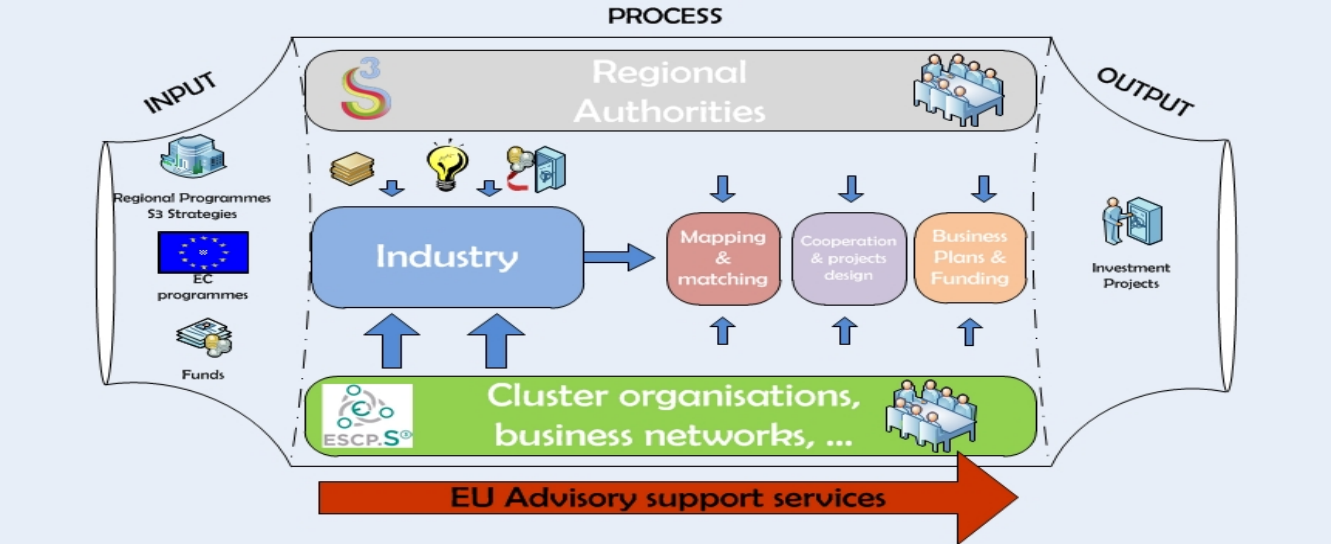
European Commission

14 EoI from Leading Regions

- ✓ Bio-Economy
- ✓ Efficient and Sustainable Manufacturing (ESM)
- ✓ 3D-printing
- ✓ Components for Marine renewables and offshore energy applications
- ✓ New nano-enabled products

Potential Thematic Areas:

- ✓ Innovative textiles
- ✓ Industry 4.0
- ✓ Smart tooling
- ✓ Circular economy
- ✓ Defence



Examples

- ✓ Projects across and between regional value chains
- ✓ Important Projects of Common European Interest
- ✓ Development of new or sharing of existing infrastructures (testing facilities, pilot lines, data centres…)

The European Commission's

Digital Cities Challenge

Make your city more liveable, more productive, and more innovative

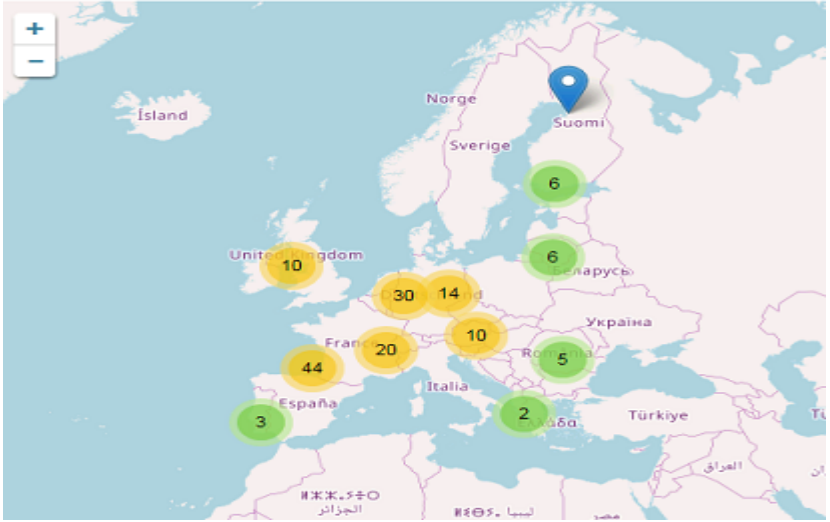
ABOUT DIGITAL CITIES

The Digital Cities Challenge is a tailored programme of coaching and facilitation launched by the European Commission to help cities develop and implement digital policies that can transform day to day life for residents, businesses, workers, and entrepreneurs.

Access to technology
MAPPING OF KETs CENTRES

+/- 1200 potential applicants

+/- **230 centres registered so far** (target is at least 300 centres)

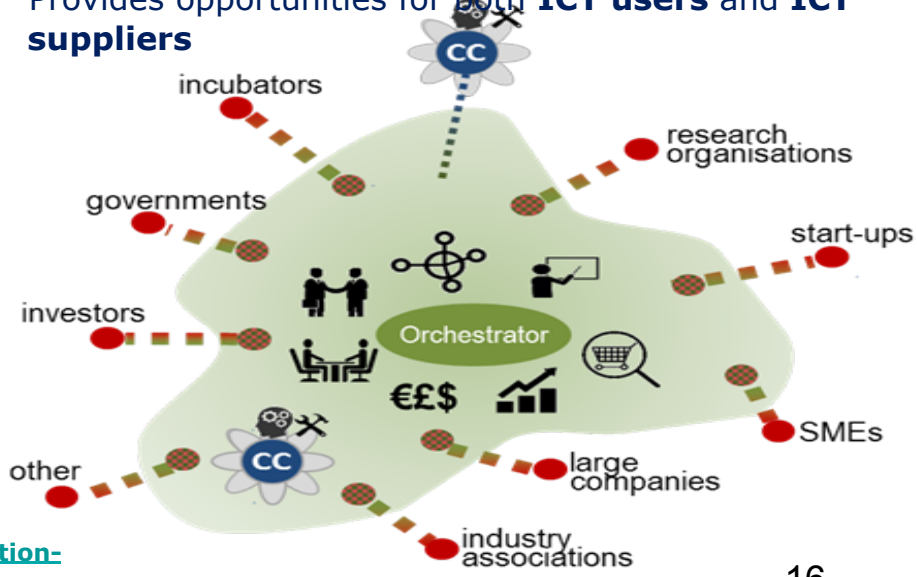


Geographically unevenly distributed => follow-up actions between centres

https://ec.europa.eu/growth/tools-databases/kets-tools/kets-tc/map

Access to technology
Digital Innovation Hubs

- Provide support to **existing industry** to manage their **digital transformation**
- **Competence Centres** are at the **core of DIHs, ecosystem approach**
- **Variable geometries**: technology applications, sector, SME focus, service portfolios, etc
- Provides opportunities for both **ICT users** and **ICT suppliers**



Working Group report on DIHs:
https://ec.europa.eu/futurium/en/content/report-wg1-digital-innovation-hubs-mainstreaming-digital-innovation-across-all-sectors-final

Access to technology
Digital Innovation Hubs

SMART SPECIALISATION PLATFORM

European Commission / Smart Specialisation Platform / Tools / Digital Innovation Hubs

Home | S3 Platform | Sections | Tools | News | Events | Knowledge Repository | Search

Digital Innovation Hubs

Search
Enter any search term

Countries
None selected

Evolutionary Stages
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Technical Competences
None selected

Services Provided
None selected

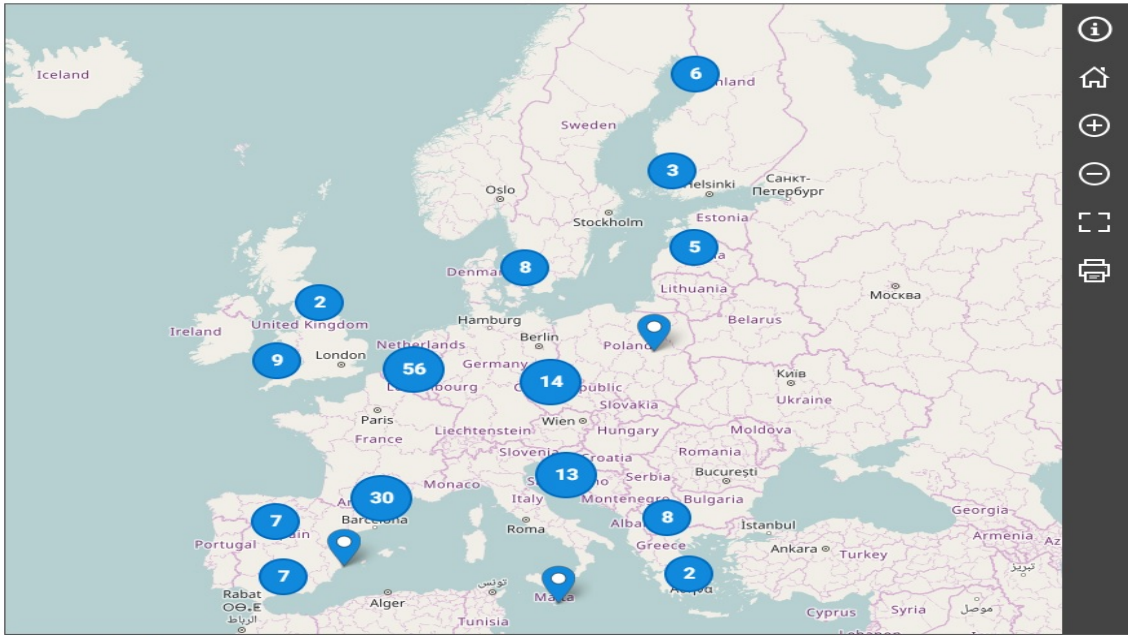
Focus on TRL
None selected

Market sectors
None selected

SEARCH

Contact us in the following email: JRC-B3-DIH@ec.europa.eu

Click on the following link if you want to propose new HUB.



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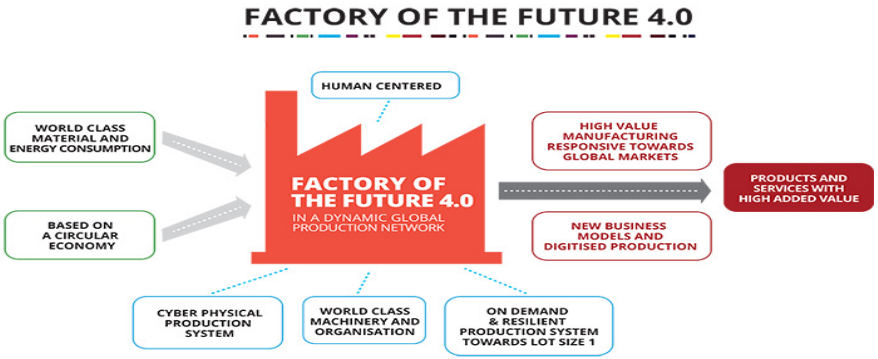
Fully Operational | In preparation

Access to technology
Advanced Manufacturing Support Centre

European Commission

1. Help SMEs assess the possibility of adopting advanced manufacturing solutions and transforming towards a Factory of the Future

Coherent methodology, incl. self-scan
Pilot action with SMEs
Training of national/regional support organisations (further replication)



2. Set up learning networks of next-generation factories, as inspiring examples for other companies

EUR 2.4 Mn (COSME)
3 years
Results will be publicly available

Scaling up as part of future (WP 2020) Horizon2020 action (5,7 Mn €)

Advanced Manufacturing is much more than equipment and technology

European Commission

ARTIFICIAL INTELLIGENCE FOR EUROPE

By 2025 the economic impact of the automation of knowledge work, robots and autonomous vehicles will reach between €6.5 and €12 trillion annually.

Europe is behind in private investments in AI: €2.4-3.2 billion in 2016, compared to €6.5-9.7 billion in Asia and €12.1-18.6 billion in North America.

A European approach on AI will boost the European Union's competitiveness and ensure trust based on European values. It is based on 3 pillars:

1 Boosting Europe's scientific base, technological know-how and industrial capacity

2 Preparing for socio-economic changes brought about by AI

3 Ensuring an appropriate ethical and legal framework

The European Commission has already invested significant amounts in AI, cognitive systems, robotics, big data and future and emerging technologies to help Europe be competitive:

AI-RELATED AREAS

Around **€2.6 billion** over the duration of Horizon 2020 on **AI-related areas (robotics, big data, health, transport, future and emerging technologies).**

ROBOTICS

€700 million under Horizon 2020 **+ €2.1 billion** from private investment **in one of the biggest civilian research programmes in smart robots in the world.**

SKILLS

€27 billion through European Structural and Investment Funds, on **Skills development** out of which European Social Fund invests, **€2.3 billion** specifically in digital skills.

The expert group on artificial intelligence will help with the implementation of the Communication on "Artificial Intelligence for Europe", support the set-up of a community of stakeholders – the AI Alliance – and draft AI ethics guidelines.

Watify is

an awareness-raising campaign to support the EU efforts to **stimulate the modernisation of Europe's industry** by:

- *Boosting the **technological transformation** of European SMEs*
- *Supporting Europe's regions to translate their smart specialisation strategies in the areas of **digitisation and KETs** into **concrete projects.***

boost and facilitate

240

AWARENESS EVENTS

in regions and cities across Europe

connect

40

MATCHMAKING EVENTS

inspire

100

SUCCESS STORIES

How?

Boosting Technological Transformation

- **boost and facilitate** technological transformation in SMEs and between regions and cities through business and regional intermediaries.
- **connect** SMEs and stakeholders by facilitating the sharing of best practices, lessons learnt and new transformation ideas for advancement and by encouraging collaboration on joint projects.
- **inspire** SMEs and local stakeholders to transform and work together to take full advantage of digitisation and Key Enabling Technologies (KETs).

European Commission

Thank you very much!

Digital transformation of industry and enterprises:

http://ec.europa.eu/growth/sectors/digital-economy/index_en.htm

https://ec.europa.eu/digital-single-market/en/policies/digitising-european-industry

Specialisation Platform for Industrial Modernisation*:*
https://ec.europa.eu/digital-single-market/en/digital-innovation-hubs, http://s3platform.jrc.ec.europa.eu/home

Digital Innovation Hubs: http://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool

KETs http://ec.europa.eu/growth/industry/key-enabling-technologies/index_en.htm