

Internal Market, Industry, Entrepreneurship and SMEs Directorate General

Key Enabling Technologies for Industrial Modernisation

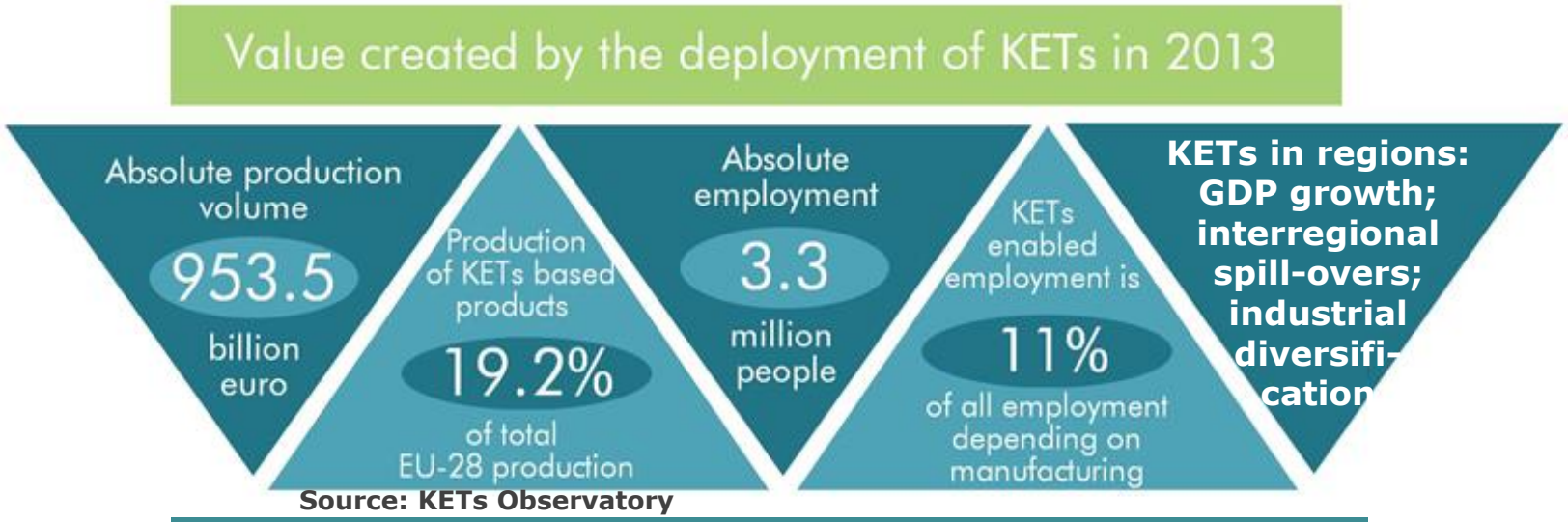
Heidi MOENS, Policy Officer

KETs, Digital Manufacturing & Interoperability Unit

Joining Sub-Platform to Manufuture
6th General Assembly Stakeholder meeting
Brussels, 17 June 2016

Advanced Manufacturing
Advanced Materials
Industrial biotechnology
Photonics
Micro-/nanoelectronics
Nanotechnologies

Value created through KETs in Europe



Source: KETs Observatory

Further growth potential (10 - 20% in coming years)

- ☞ Key to strengthen high-performing industrial base
- ☞ Opportunities for regional growth, industrial modernisation and competitiveness

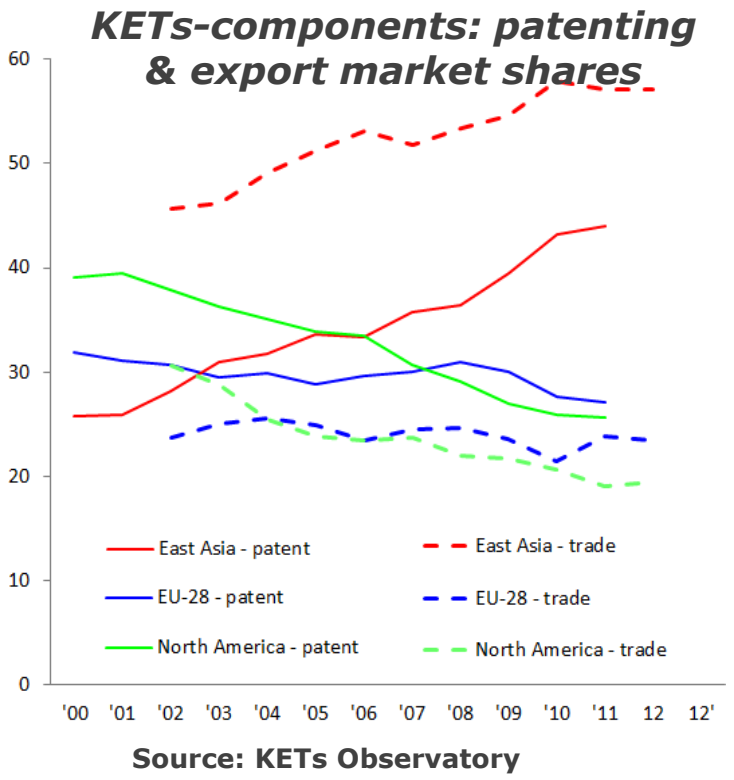
Challenges

European Commission

Need to boost KETs deployment (bridging gap between research and market) … in a highly competitive environment

EU28 resists but the pressure from East Asia is very high !

Need to stimulate uptake and investments



Source: KETs Observatory

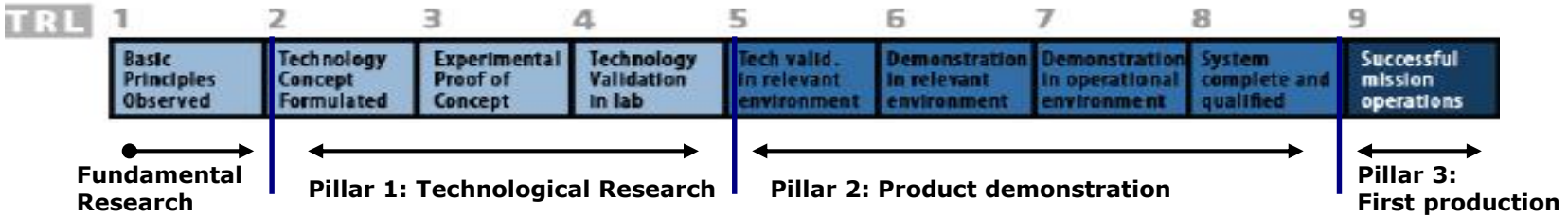
R&D investments by EU companies in high-tech sectors is only 40% US companies
Source: EU Industrial R&D Investment Scoreboard 2015

Fewer than one in five manufacturing companies have used advanced manufacturing technologies (digital, sustainable or high-performance enabling technologies)
Source: Innobarometer 2016

Speeding up deployment and uptake for a modern, competitive and sustainable industry!

Progress had been made...

European KETs Strategy (2012): Instruments have been adapted & aligned to boost KETs deployment



1. Horizon 2020 (TRL 1 – 8)

2. Structural Funds (TRL 2 – 9)

3. European Investment Bank (TRL 2 – 9)

4. State aid rules modernised: higher notification thresholds & aid intensity

Regional aid & IPCEI

1. Priority for KETs under LEIT (€ 6 bn):
- × Closer to market
- × Greater focus on impact
- × Synergies encouraged

2. KETs, a R&I priority of ERDF:
- × 65% of regions (15/25 MS) intend to invest in KETs
- × Highest R&I priority (23%)

3. MoU with EIB on KETs: EIB loans to KETs projects reached already €9 bn for 2013/15

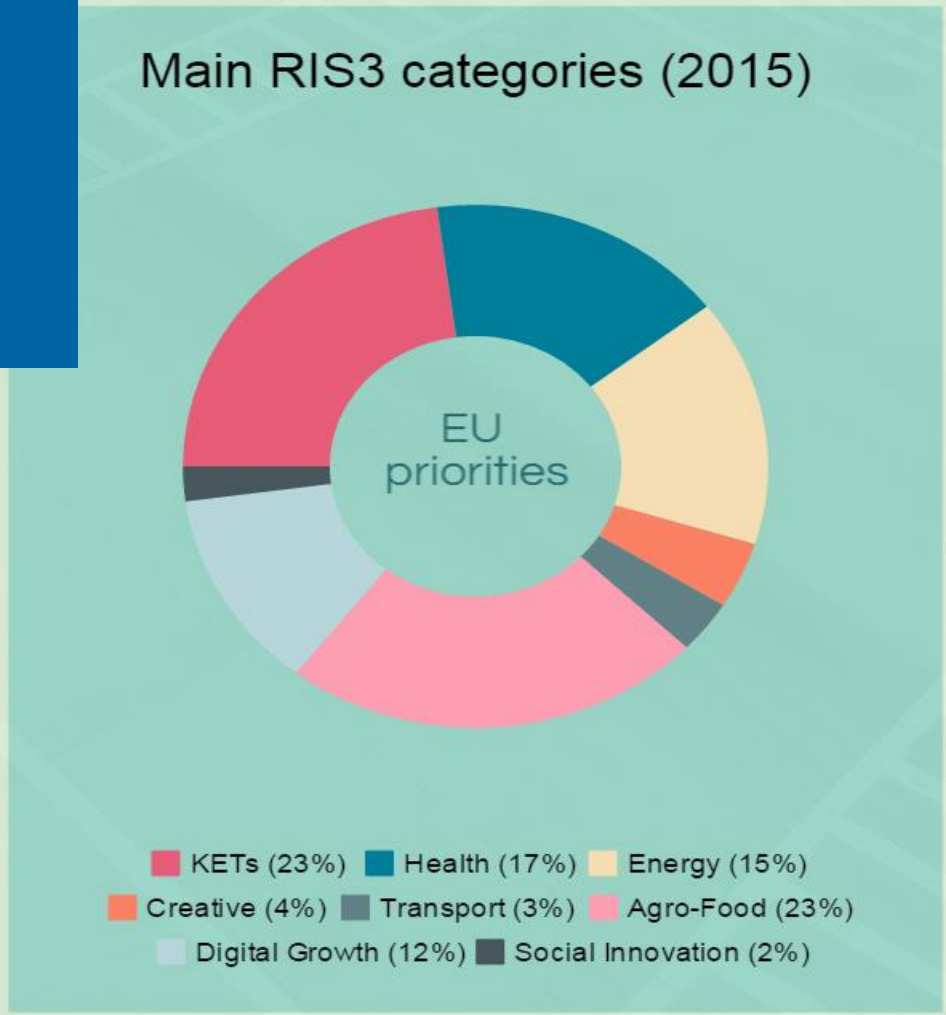
4.
- × Doubled state aid thresholds (GBER)
- × Increased max. aid intensities incl. for pilot lines (R&D&I)

Smart Specialisation Strategies designed

S3 Platform

1,260+

The number of priorities encoded in the Eye@RIS3 database





Many RIS3 priorities are linked to several such categories

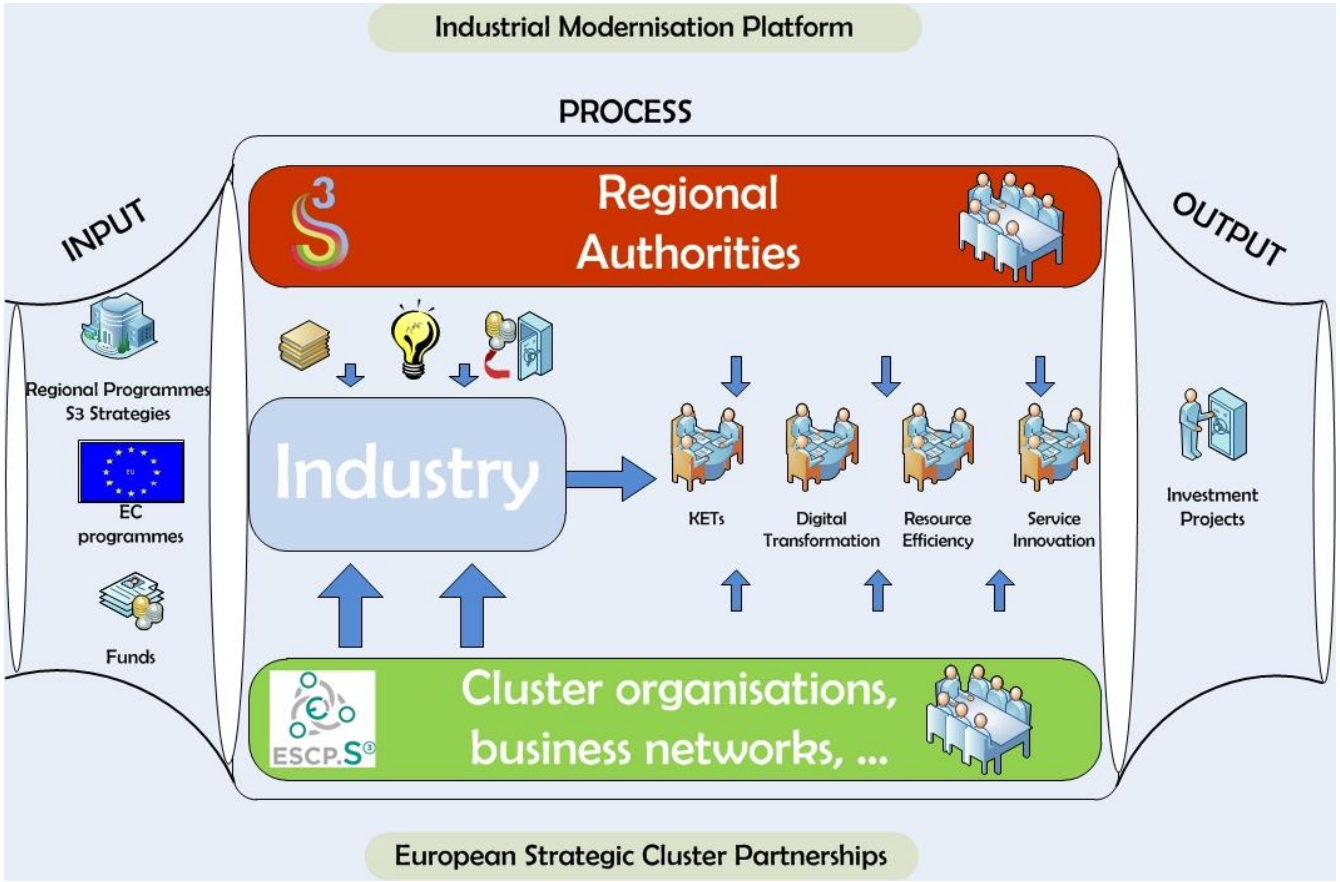
Bridging the uptake & investment gap

Speeding up deployment and uptake of advanced technologies for a modern, competitive and sustainable industry

Against a background of trends such as globalisation, resource scarcity and digitalisation, European manufacturing companies need to undergo innovation-driven transformations towards more competitive, sustainable and modern production

1. **Strengthening regional ecosystems and foster partnerships**
   - ✓ Thematic Smart specialisation platform for industrial modernisation & investment
2. **Helping companies to innovate**
   - ✓ Access to technology and expertise: Ensure SMEs have easy access to state-of-the art facilities and can make informed investment decisions
   - ✓ Access to skills and access to finance
3. **Ensuring adequate regulatory and policy framework**

Industrial Modernisation Platform



Examples

- ✓ Projects across and between regional value chains
- ✓ Important projects of common European interest
- ✓ New investment platforms under the investment plan
- ✓ Development of new or sharing of existing infrastructures (testing facilities, pilot lines, data centres…)

http://ec.europa.eu/growth/industry/innovation/smart-specialisation/index_en.htm
http://s3platform.jrc.ec.europa.eu/industrial-modernisation

Industrial modernisation focus

Priorities such as

- *Key Enabling Technologies*
- *Digital transformation*
- *service innovation*
- *resource efficiency*

This includes advanced manufacturing, digital transformation/ industry 4.0, digital platforms, big data analytics, space data services, advanced material and disruptive business models and service concepts including in creative industries, textiles & tourism.

How to get involved?

European Commission

Lead Regions/MS

Interest handling by Joint Research Centre (JRC) → Region submits application to JRC → Commitment verification before info on S3P web site → Call for expression of interest for inviting other regions → Establishment of Thematic Area

Specific actions for key enabling technologies and digital transformation

(e.g. 3D Printing, Watify II)

→ Support to Partner-ships → Invest-ment projects

Business networks, cluster organisations and technology centres

Call for expression of interest published towards European Strategic Cluster Partnerships for smart specialisation investments (S^3)

EUROPEAN CLUSTER COLLABORATION PLATFORM .eu

→ Launch or join a partner search for a thematic Partnership by December 2016 → Participate at match-making events → 2017 call for establishment of Cluster Partnerships

Events to get engaged in

- ✓ ***11 May 2016**: InfoDay*
- ✓ ***1-2 June 2016**: Official launch at **'Smart Regions Conference'***

  … Progressively, collaboration subthemes will be (further) identified (can be led by one (or group of) regions)

  … S3P-Industrial Modernisation will provide support to lead regions and their innovation actors (e.g. analytical support, advisory support services, organisation of matchmaking events)
- ✓ ***10-13 October: Open Days workshops** to advance further on partnering*
  - ✓ *Cities and regions as launchpads for digital transformation, 11 October*
  - ✓ *From smart specialisation to investments projects for industry modernisation', 13 October*
- ✓ ***30 November-2 December 2016: European Cluster Conference**, including matchmaking pre-event*
- ✓ ***Mid 2017**: Stocktaking at "**GROW your REGIOn**" conference*
- ✓ *…*

☞ *Pipeline of investment projects being progressively created*

Bridging the uptake & investment gap

European Commission

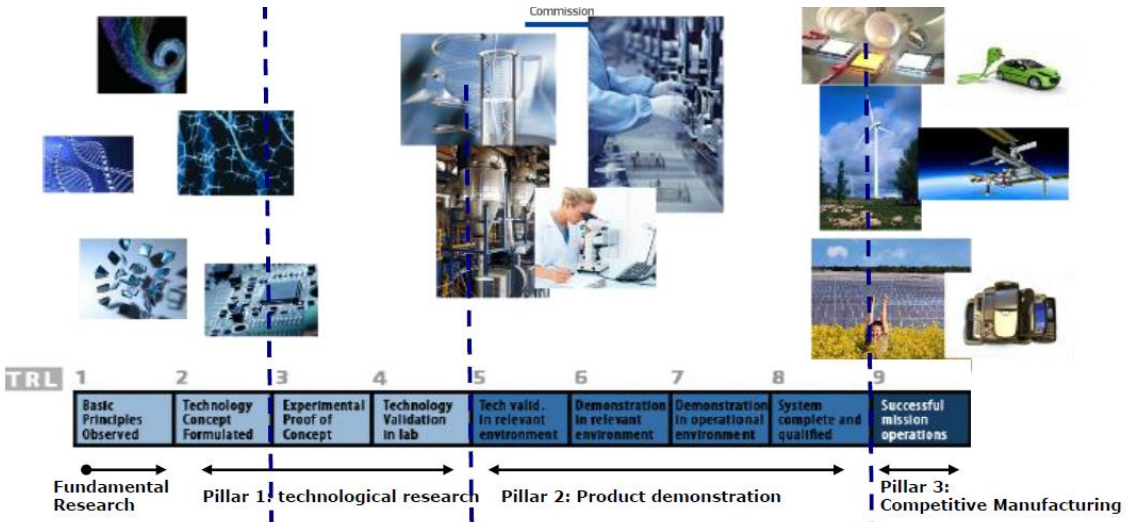
2. Helping companies to innovate: Ensure SMEs have easy access to state-of-the art facilities

Shared facilities help companies to

- *reduce the costs of innovation projects (equipment)*
- *increase probability of success (expertise)*
- *reduce market uncertainty* (clients)

SMEs have difficulties to access (limited human resources, financial capacities or lack of awareness)

Mapping of KETs technology infrastructures providing services to companies



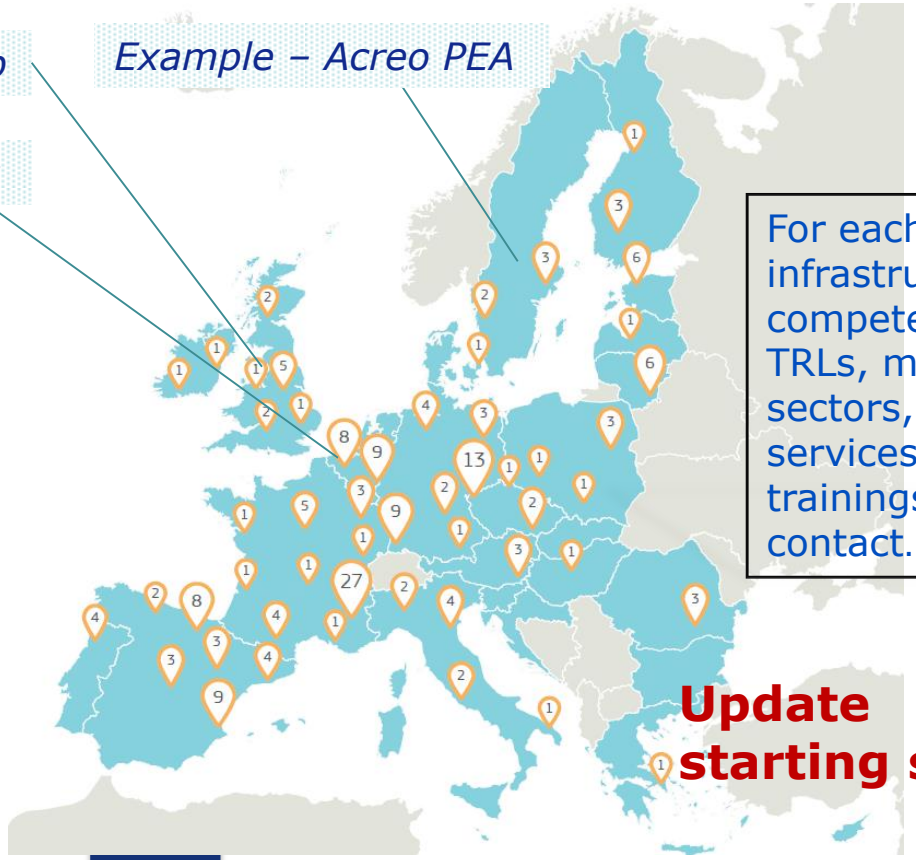
Mapping of European KETs Technology Infrastructures providing services to SMEs (Sept 2015)

Webtool online at https://ec.europa.eu/growth/tools-databases/ketsobservatory/kets-ti-inventory/map

Example - Warwick Manufacturing Group

Example – Acreo PEA

Example – Biobase Europe Pilot Plant



Total of 187 KETs Technology Infrastructures

60% in only 4 countries (DE, ES, FR, UK)

Need for networking and pan-European access to SMEs

For each infrastructure: competences, TRLs, market sectors, services, trainings, SME contact…

Update starting soon!

European Commission

Warwick Manufacturing Group: good practice of how universities and business can successfully work together to develop new products & processes

CATAPULT High Value Manufacturing

WMG THE UNIVERSITY OF WARWICK

Case Study 1: Barton Coldform Ltd



barton COLD FORM INNOVATION

- Manufacturer of critical fastenings and special cold forgings
- Worked with WMG to introduce Additive Manufacturing to prototyping process
- Reduced lead time of proof of concept parts by 12 weeks
- **Led to contract win with Ford Motor Company worth £300k**

Case Study 2: Austin factory

Watch the Euronews Business Planet:
http://www.euronews.com/2016/01/08/the-importance-of-key-enabling-technologies-for-smes/

investing in your future
European Regional Development Fund
European Union

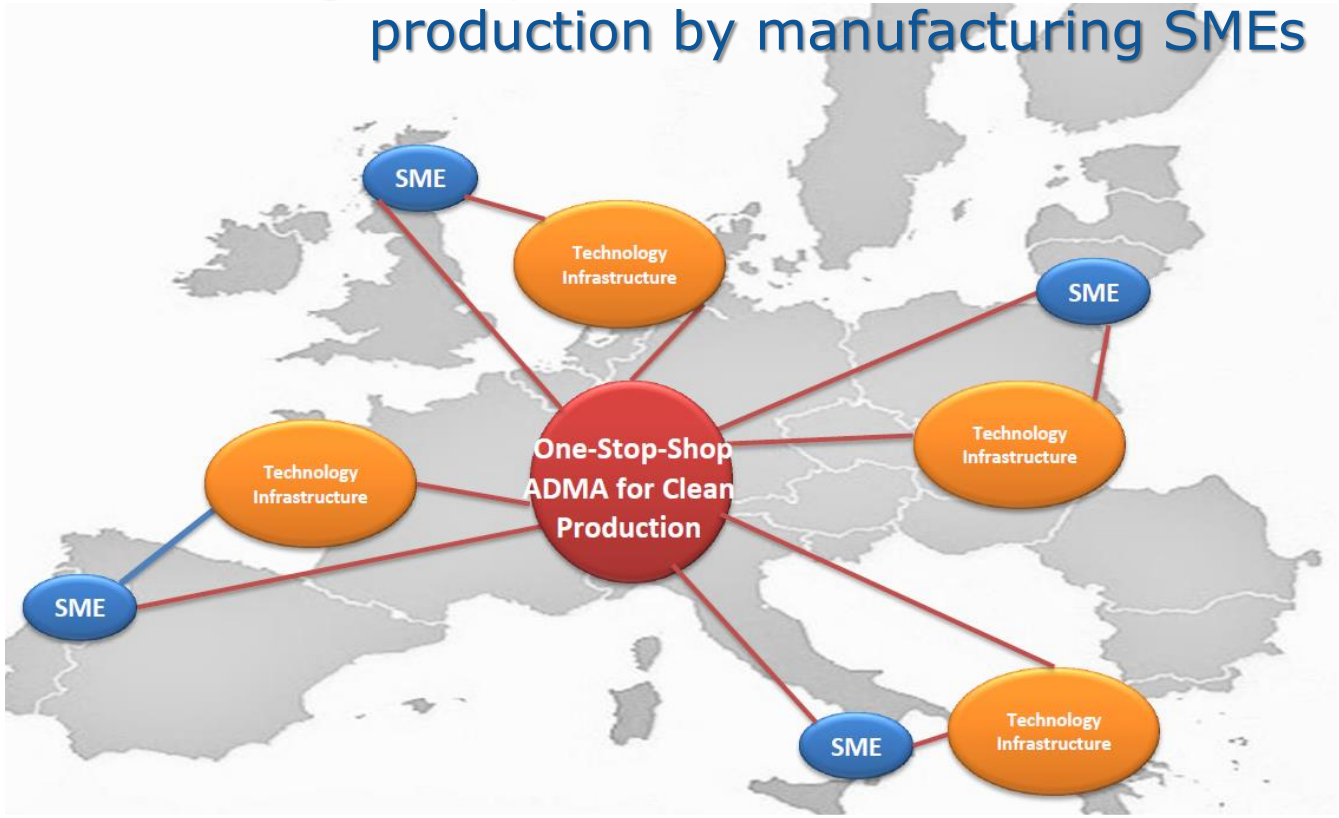
WMG is co-funded via ERDF

Ensure SMEs have easy access across borders to state-of-the-art technology services in KETs

- ✓ **Catalogue of EU KETs technology centres** sharing their equipment and expertise with companies launched (Sept 2015), making it easier for SMEs to access these centres across Europe; Update will start soon (finalisation 2017)
- ✓ **Awareness raising campaign** (2016-2017), incl. to foster collaboration between centres and ease their access by SMEs
- ✓ Exploring feasibility of creating **cross-border networks of technology centres with easy access for companies** (2016-2017)
- ✓ **Pilot of cross-border network launched** under Horizon2020 (2017, €4,9 mio): Technology services to accelerate the uptake of advanced manufacturing technologies for clean production by manufacturing SMEs

Promoting cross-border networks of technology infrastructures – Pilot launched

Accelerating the uptake of advanced manufacturing for clean production by manufacturing SMEs



INNOSUP-03-2017: Technology services to accelerate the uptake of advanced manufacturing technologies for clean production by manufacturing SMEs

Overall Budget : 4.9 million EUR (3 years)

One-stop shop access for SMEs from network of technology infastructures

Ecosystem of infrastructures, SME users and suppliers

Single-stage submission procedure

Services such as prototyping & pilot production, training and advice

resource-efficiency; modular products; process control technologies; …

Publication: 14-10-2015
Planned Opening: 8-11-2016
Deadline: 28-03-2017

Grants awarded to SMES : maximum 60 000 euros (full costs not covered)

Service driven by business needs - Best value for money for each SME proposal

https://ec.europa.eu/research/participants/portal4/desktop/en/opportunities/h2020/topics/6088-innosup-03-2017.html

Access for SMEs to advanced manufacturing support

The need: Especially for SMEs it is difficult to be fully informed on the various existing manufacturing solutions

Potential COSME action (2017)*:* (virtual) pan-European support centre for manufacturing SMEs in order to

(1) help SMEs assessing the possibility of adopting advanced manufacturing solutions (new technologies, equipment or production strategies)

- ✓ Methodology for access to expert consultation (company self-scans, elaboration of transformation plans, guidance to technology centres etc.)
- ✓ Pilot to accompany and assist SMEs
- ✓ Promote further deployment of methodology in new initiatives in cooperation with clusters, innovation support organisations etc.

(2) set up learning networks of next-generation factories to become the inspiring examples for other manufacturing companies

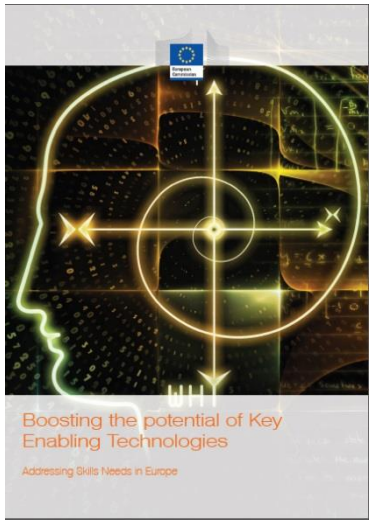
2. Helping companies to innovate: access to skills

- **Report & brochure (March 2016):**

  "Skills for KETs in Europe: state of play, supply and demand, strategy, recommendations and sectoral pilot" (PwC)

  Depending on how the field develops
  - ✓ *Next ten years additional 953,000 to 2,991,000 KETs professionals are needed to satisfy **demand***
  - ✓ *Potential **gap** of approx. 21,000 – 83,000 per year for high skills and approx. 10,000 – 44,000 per year for medium skills*

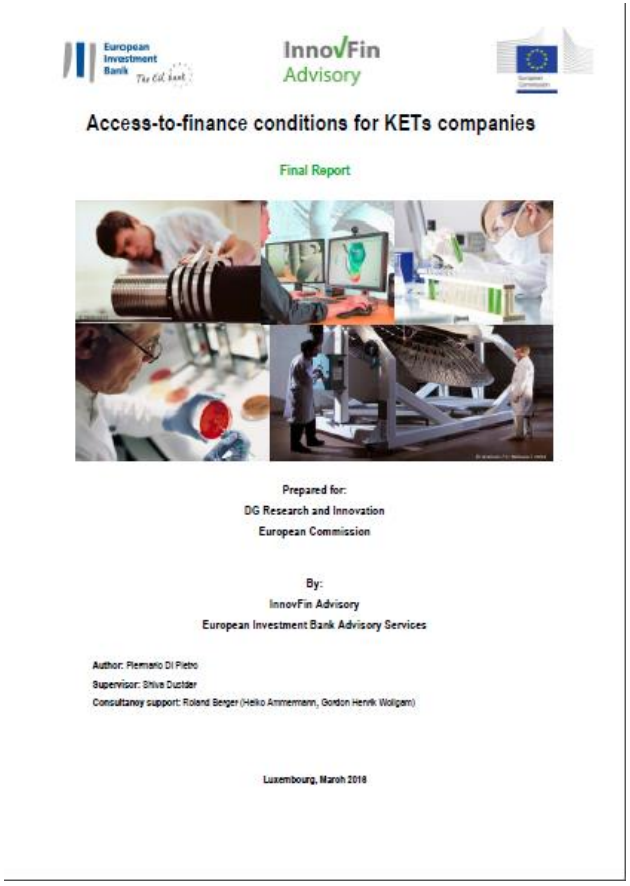
  Data on skills for KETs included in SWD(2016)195 of 10 June 2016



- **Action on curriculum guidelines** for advanced manufacturing and other KETs (publication second half of 2016)

- **EU Skills Agenda** (adopted on 10 June 2016): 10 actions including
  - ✓ The '**Blueprint for Sectoral Cooperation on Skills**' to improve skills intelligence and address skills shortages in specific economic sectors
    - ✓ First wave: automotive, maritime technology, space, defence, textile and tourism
    - ✓ Second wave:construction, steel, health, green technologies, renewable energies

2. Helping companies to innovate: access to finance


European Investment Bank The EU bank

InnovFin Advisory

Access-to-finance conditions for KETs companies

Final Report

Prepared for:
DG Research and Innovation
European Commission

By:
InnovFin Advisory
European Investment Bank Advisory Services

Author: Riemario Di Pietro
Supervisor: Shive Duckler
Consultancy support: Roland Berger (Heiko Ammermann, Gordon Henrik Wolgam)

Luxembourg, March 2016

Report European Investment Bank (March 2016) - ***Access-to-finance conditions for KETs companies***

Key insight: Many KETs companies struggle or fail to obtain adequate debt financing. Due to its general risk aversion, the banking sector does not cater to the specific needs of many KETs companies.

Actions in frame ***Start-up Initiative*** *(Single Market Strategy) being explored*
Your ideas are welcome (public consultation until 31 July 2016)!

3. Ensuring adequate regulatory and policy framework

- ***Removing regulatory barriers*** to market uptake of and investment in KETs, such as barriers which could prevent the success of IPCEIs

- ***Ensuring that policy initiatives trigger market opportunities***, *e.g.*
  - ✓ Circular Economy package (adopted Dec 2015)
  - ✓ Energy Union Communication – Integrated Energy Union strategy for Research, Innovation and Competitiveness
  - ✓ Dual-use opportunities for KETs (COSME, 2015-2016)
    - Study to identify examples of technologies with dual-use potential as potential input to future R&I programmes

Speeding up deployment and uptake of advanced technologies for a modern, competitive and sustainable industry

- ✓ Providing **appropriate instruments and encouraging stakeholders to make best use** of it (e.g. Horizon2020, Structural Funds, EIB, Investment Plan, COSME)
- ✓ Promoting **strengthened cooperation and joint actions**: thematic platform for industrial modernisation, fostering regional co-investments, fostering dialogue between business stakeholders, research and innovation communities and regional authorities, facilitating important projects of common European interest
- ✓ **Facilitating easy access to advanced technologies & expertise for all companies, and especially SMEs**, wherever they are located in Europe
- ✓ Ensuring **adequate regulatory and policy framework**

Be part of it!

THANK YOU !

European Commission
DG Internal Market, Industry, Entrepreneurship and SMEs
Unit F3: KETs, Digital manufacturing and Interoperability
B-1049 Brussels

E-mail: GROW-F3@ec.europa.eu

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

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

ICT Standardisation
http://ec.europa.eu/growth/sectors/digital-economy/ict-standardisation/index_en.htm