



Societal Challenges – Training and Education

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Training and Education Outline





- **Why is Education and Training important in achieving the European objectives?**

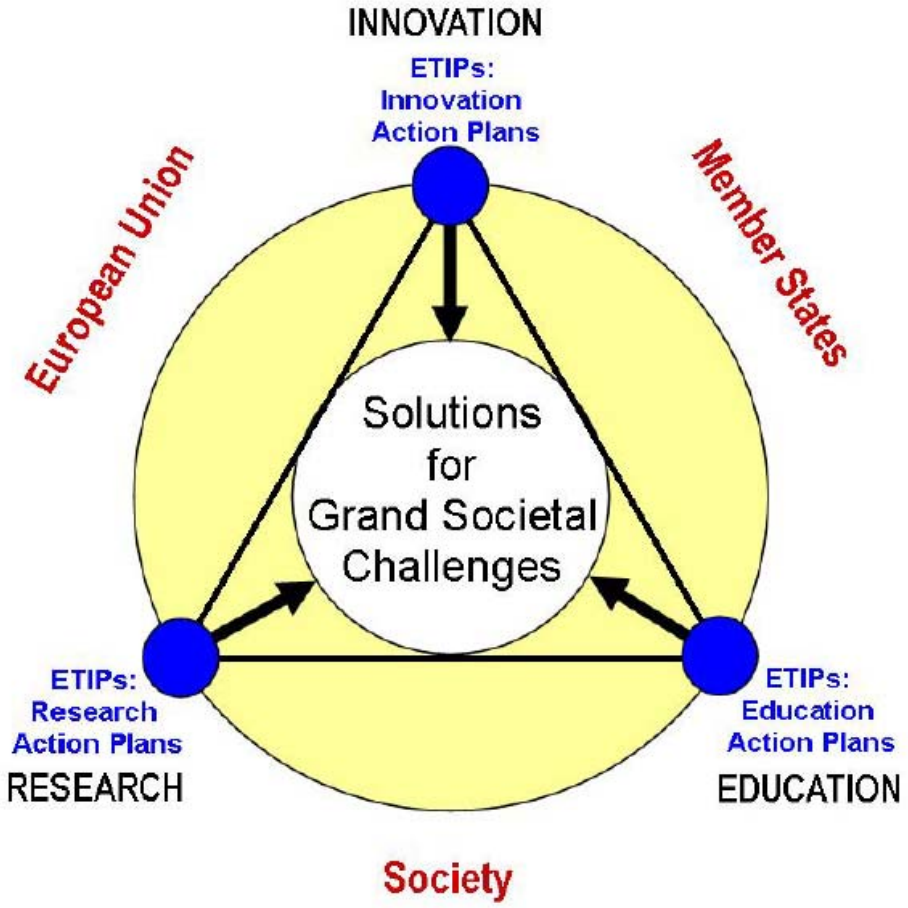
- What is future of Training and Education in Europe?

Training and Education in the Innovation chain



In 2009 a report by the European Commission identified the steps that the ETP community, the Commission and Member States should take to address Europe's societal challenges:

- focus efforts more directly on societal challenges and on developing products and services for a sustainable future;
- help to unite all relevant forces across Europe in working towards solutions for societal challenges;
- take all three elements of the knowledge triangle into account -**education**, research and innovation - and specifically tackle the complete innovation chain.



And this steps are still needed!!!

Training and Education Societal Challenges







Education and Training in the Manufacturing Flow Diagram





Manufacturing Flow Diagram

Continuous processes

Processed materials

Material supply

Semi finished parts

Discrete processes

Enablers

Design, Function, Features

Equipment, Tools, ICT, Integration

Education and Training of the work force

Fabrication

Parts/ components

Products Addressing Societal Challenges

Technology

Processes:
Casting, Moulding
Forming, cutting, grinding
Joining, Nano Technolgy
and / or
Additive Manufacturing

Technology

Post Processing/ Assembly

Training and Education and the H2020 Pillars





Excellent science

- **European Research Council**
  - *Frontier research by the best individual teams*
- **Future and Emerging Technologies**
  - *Collaborative research to open new fields of innovation*
- **Marie Skłodowska Curie actions**
  - *Opportunities for training and career development*
- **Research infrastructures** (including e-infrastructure)
  - *Ensuring access to world-class facilities*

Industrial Technologies

- **Leadership in enabling and industrial technologies**
  - *ICT, nanotechnologies, materials, biotechnology, manufacturing, 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*

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, resource efficiency and raw materials**
- **Inclusive, innovative and reflective societies**
- **Security society**

European Institute of Innovation and Technology (EIT)

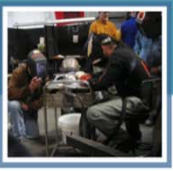
Spreading Excellence and Widening Participation

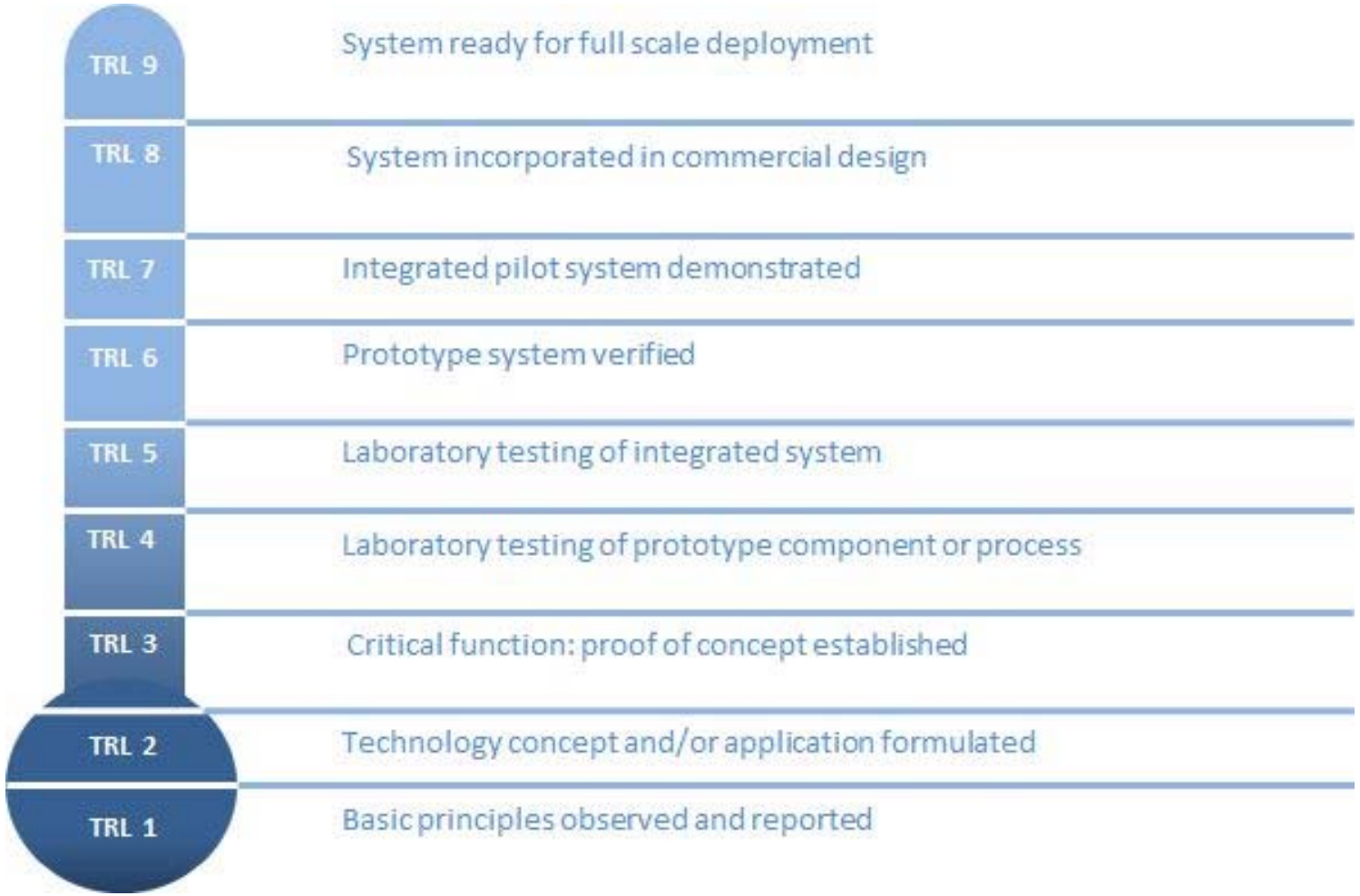
Science with and for society

Joint Research Center (JRC)

Training and Education and the TRL







Training and Education Reach EU Industrial Target





- Growing to a sustainable and job-rich future
- Industry to approach 20% of GDP 2020
- Increase trade in goods in the internal market to 25% of GDP by 2020

In order to achieve these goals Europe needs well trained and educated workers.

Training and Education Outline





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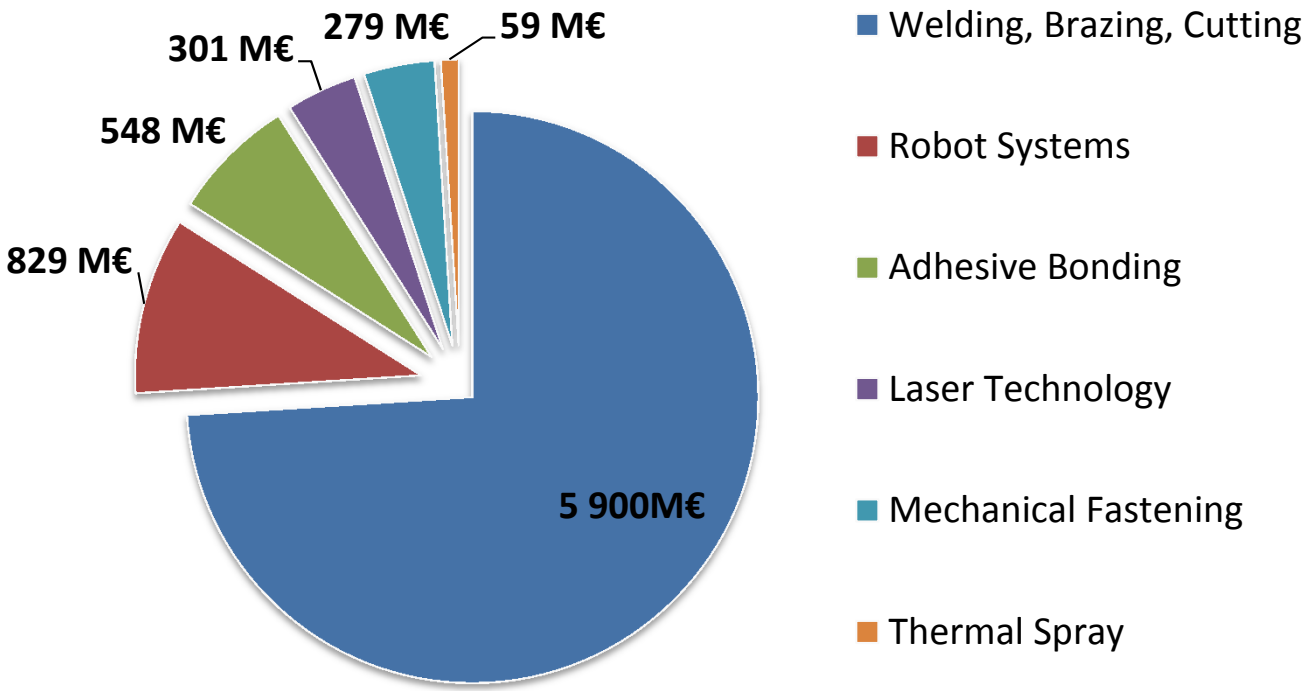
- **The European needs of Training and Education in Joining?**

Education and Training
Welding Case



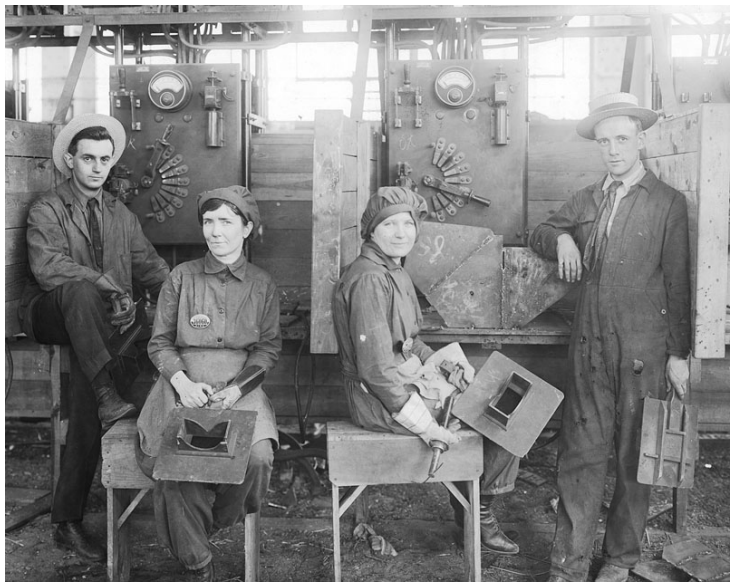


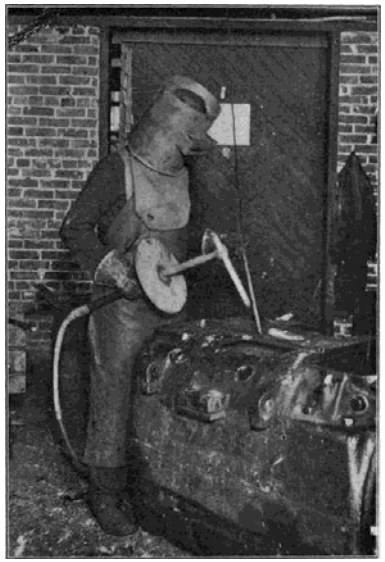
"The value added by manufacture and application of Joining technology in Europe amounted to around EUR 65 billion in 2010. Over 1.25 million employees were connected with this added value within Europe in 2010" (Moos 2013).

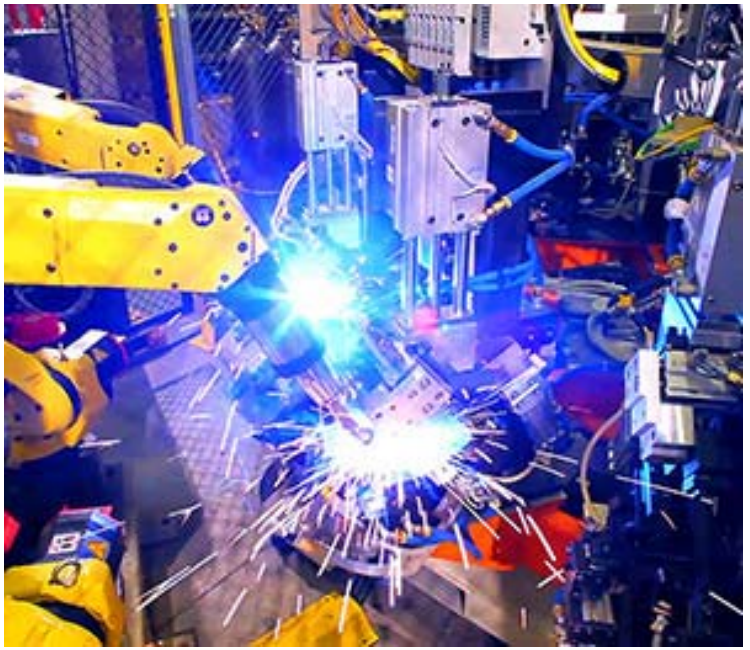


PRODUCTION / VALUE ADDED: Devices and Systems 2010

Education and Training
Welding Case







Education and Training
Key Messages





- Joining has a key role in the European Manufacture industry
- Well educated and trained workers are necessary in order to achieve all the European objectives
- Horizon 2020 is a unique opportunity to strengthen the European manufacturing base by educating and training the necessary workforce



Thank You

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