Industry and Innovation 4.0

EfVET workshop – 25 October 2018

Massimiliano Mascherini
The Future of Manufacturing
Objectives of the Future of Manufacturing

“Primarily an anticipatory research project”

“Explore scenarios for the re-industrialisation of Europe and its employment dimension.”

“Detailed quantitative exploration of the employment dimension”

“Will entail a large number of case studies”

“An in depth study on dual and vocational systems …”
Apprenticeship in EU and world competing regions

**First Report:** providing an analytical overview of apprenticeship systems in the selected countries and to review policy developments in response to labour market shifts, changes in employment, career and mobility patterns, technological and structural change.

Overview report and working papers will be available at [http://eurofound.link/fomeef18006](http://eurofound.link/fomeef18006) in October 2018.
Apprenticeship at company level

Second Report: investigating the actual implementation and adaptation of apprenticeship programmes particularly in advanced manufacturing at company or industrial district or regional cluster level

Overview report and working papers will be available at http://eurofound.link/fomeef18007 in November 2018
Apprenticeship and industry 4.0

• Increasing interest of EU and national policy makers in apprenticeships as a way to tackle the generally high levels of youth unemployment and to integrate young people into the labour market.

• Public industrial policy initiatives have been established with the aim of promoting advanced manufacturing BUT overall the link between these initiatives and VET policies and apprenticeship practices is rather weak.
Apprenticeship and Industry 4.0

- Apprenticeship should be regarded as an **integral part of modern industrial policy**. Greater involvement of sectoral **social partners** and VET institutions in industrial policy dialogue.

- **Apprenticeship training** in advance manufacturing occupations around Europe is facing **similar requirements and challenges** as regards adjustments of curricula, modernisation of courses and programmes resulting from new disruptive technologies and respective requirements regarding skills, competences and qualifications.

- Many of the **Advanced Manufacturing VET programmes** have been **initiated** from scratch solely or with strong involvement of **single large companies**, thereby indicating new needs at company level resulting from advanced manufacturing technologies, processes or materials as well as new skills and competence requirements in managerial positions.
In many cases there is **mismatch between supply and demand**. Either too many young people applying for an apprenticeship, or not enough. Or, most importantly, they are not equipped with appropriate basic math skills for these type of apprenticeships.

Advanced manufacturing triggers the need to integrate **new and transversal skills and competences into initial training** and apprenticeship programmes across all occupational profiles. Workers and apprentices across all manufacturing occupation need to **possess skills** and competences in fields such as learning and working in a **digitalised world** ICT hard and software, data handling as well as digital systems and processes.

In addition to these transversal skills and competences, advanced manufacturing also requires a **deepening of new skills and competences** toward very specific technologies, or advanced materials and their application in the production process.
Key Issues
• How to detect new skill needs? And how to adjust curricula to new skill needs?
• How to up-skill or re-skill teachers and trainers

• What are the most suitable VET arrangements to cope with and take advantage from Industry 4.0?
• What are the new methodological approaches that needs to be adopted?

• How to establish partnership among stakeholders in a new changing world?
• Finance?