

The Future of Manufacturing in Europe

Introduction of advanced digital manufacturing technologies in European regions

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‘The Future of Manufacturing in Europe’ is a Pilot Project proposed by the European Parliament and delegated to the European Foundation for the Improvement of Living and Working Conditions (Eurofound) by the European Commission. While manufacturing has always been of fundamental importance for the European economy and labour market, recent developments have highlighted the need to strategically think about the potential future pathways of this sector. The Pilot Project explores the implications of various possible manufacturing scenarios for employment across Europe. This is done through various research projects, dealing among others with skills and tasks content of manufacturing occupations, the impact of new game-changing technologies, mapping relocation activities, SME internationalisation or dual apprenticeship programmes. The project started in April 2015 and runs for four years.

About the seminar



One module of the Pilot Project explores the process of regional industrial policy design and implementation. In addition to research, it includes a series of Regional Industrial Policy Seminars which provide a platform for regional policy makers to meet, discuss, exchange and learn from each other.

The first of these seminars took place in Sweden in May 2016. It discussed how policy can best approach the redevelopment of a region that has experienced a large plant closure in the manufacturing sector. The second seminar was held in Donostia/San Sebastian in November 2016 and focused on regional skills policies and practices. The third seminar hosted in Shannon, Ireland, in June 2017 explored how internationalisation policies are designed and implemented at regional level.

The fourth seminar took place in Tallinn, Estonia, in June 2018. During 1.5 days, about 45 participants from more than 20 European regions explored how European regions are designing and implementing policies and strategies to facilitate companies, in particular SMEs, to the transition towards the Industry 4.0 paradigm. In the first and second session, the discussion focussed on digitalisation policy frameworks from the European to the regional level and on concrete programmes and initiatives promoted by public authorities to facilitate the introduction of digital technologies in the workplace. During the third and the fourth session, which took place at Tallinn University of Technology, the participants experienced a demo of a factory layout and of a virtual reality environment in the robotic lab and discussed about digitalisation processes and lessons learned from their implementation with some companies’ representatives. The last session focussed on how digitalisation has significant implications for the workforce in companies, providing examples on specific initiatives and new forms of work organisation to boost productivity and improve working conditions.



Digitalisation in European regions: from policy perspective...

Digitalisation policies have a key impact on productivity, but digital structure, skills and performance are very different across and within EU countries. For this reason, the regional dimension and the interlinkages between the different administrative levels assumes strategic importance. In the seminar, the EU framework and some regional policy examples showcased how different levels of policies are developed and to what extent they are linked to each other.

Europe has a very strong manufacturing and research sector; however, it's lagging behind the US and China in online platforms. Moreover, in Europe there is a low uptake of digital technologies in companies. To address these and other challenges, the approach followed by the European Commission include the development of a digital single market strategy, a stronger focus on the industrial policy and an enhancement of SME oriented actions.

Next to EU policies, interesting examples of policies in support of digitalisation have been presented by the Estonian Ministry of Economic Affairs and Communication, Business Upper Austria and Danish Business Authority. It emerged from the discussion that coherence and coordination are crucial when planning regional strategies and that there is a strong need for interdisciplinarity and complementarity with existing regional, national and European policies. On the other hand, changes in political responsibilities, which may change policy structure, different expectations from stakeholders emerged as some weaknesses that can menace the continuity of a policy strategy already in place.



'Companies need to become and stay flexible!'
(Participant from Austria)

... to concrete actions and initiatives

The discussion in the seminar did not only focus on policies, but also on concrete initiatives to support digitalisation in companies. EU level initiatives like I4MS or Smart Anything Everywhere aim at fostering the digital innovation of manufacturing SMEs in Europe in order to boost their competitiveness in the digital era (ensuring access to competences, innovation networks and financial support).

Next to EU actions, regional initiatives were presented, including DigiAudit, Estonian initiative to tackle the need to get an understanding of the level of digitalisation in the companies, or DigiBoost, initiative promoted by Business Finland providing funding for SMEs and mid-caps to cover part of the salary cost of one 'digital expert' during one year, accompanying the digitalisation process of the company. More initiatives discussed include a nationwide knowledge network of digital innovation hubs developed by Confartigianato (Italy), aimed at assisting companies in their digital transformation by providing them with services, training and contacts with selected innovation providers, and Region Smart Factory, the biggest digital innovation hub in the Netherlands supporting companies in assessing whether they can become smart factories, ensuring access to shared facilities.

Entrepreneurial motivation, commitment and knowledge sharing have been identified as key aspects by the seminar participants in this context.

'We ask for a commitment from entrepreneurs. Without commitment it becomes a 'game' and not a business investment.'

(Participant from Italy)



Industry 4.0 in companies: benefits, drawbacks and lesson learnt from digitalisation

Digitalisation process in companies makes all the information about production available online, ensuring time, task and performance monitoring. The participating companies illustrated their experience at this regard. From the presentations emerged that the path of technology adoption is incremental and coherent with a business strategy already in place and with the company business model. This path usually results from the combination of traditional and digital methods. Companies experiment with technology and select only those technologies fitting with their specific needs, as in the Spanish (Pago de Carraovejas) or the Estonian case (Norcar BSB Eesti). Furthermore, SMEs need to build their knowledge and skills before being able to use and to take advantage from these tools. That's why training activities have a key role within companies.

Another important factor for an efficient implementation of digitalisation processes is the sharing of knowledge and facilities: Norcar virtual reality system has been developed in collaboration with other SMEs and with the support of Tallinn University of Technology through IMECC.

Introducing digitalisation in companies can lead to the improvement of the product, to enhance competitiveness, to increase the added value. However, there are some obstacles to tackle, which are cultural, financial and technology driven.

'The new blue collar functions are for highly skilled machine operators, so they could be defined blue collars with white gloves.'
(Participant from Italy)



Workforce perspective

Active labour market policies are very important when it comes to digitalisation. In the seminar, representatives from Finnish, Irish and Danish unions highlighted that their involvement is fundamental in countries' strategic planning and that the existence of good and strong national agreements allow both companies and employees to benefit from them. Unions have to be seen as partners and enablers from members especially to keeping up and moving on throughout the digital revolution. Even if strong differences among EU countries have been noted during the discussion, the examples from northern European countries illustrated a general positive and supportive attitude towards digitalisation and automation. Digitalisation not only produces efficiency, but also helps workers' safety and health (as shown by the decrease in the number of disability pensions in the Finnish case). In this context, employees represent a prioritised area (safe and secure workplace, health, employee development, equal opportunities and work life balance).

Task automation and digitalisation also imply that the distinction between white and blue collars is disappearing or changing. At this regard, the role of unions is to help companies in adapting their workforce to the new set of skills required by the digitalisation process, for example providing certified training and convincing companies to see innovation in workplace as the way forward.

Participants also identified some challenges to address when manual work will become knowledge work: effect to minimum wages, working hours' adjustment, social risks, equal opportunities in working life and education.



'It is important to keep jobs and workplaces, and digitalisation is one of the ways to do it.'
(Participant from Finland)

Moving forward — lessons learned

Digitalisation in SMEs can be fostered through:

- ⇒ Awareness raising: companies need all information available on technologies, supporting instrument and successful cases to be able to develop a digitalisation strategy.
- ⇒ Engagement: whilst big companies seem much more autonomous in their digit(al)isation processes with very limited dependence from external support, SMEs need to be approached and engaged in thinking about the added value that digitalisation could bring to their businesses. Policy makers play a big role at this regard.
- ⇒ Lifelong learning: digitalisation means also new qualification requirements; at this regard companies need to develop a proactive approach towards new forms and programmes in further vocational training.
- ⇒ Collaborative manufacturing: a collaborative approach among SMEs can enhance their knowledge about digitalisation; moreover, as they cannot always afford the costs to invest in a new technology autonomously, a collaborative approach can also mean sharing investments with other independent companies to reach economies of scale.

Some positive feedback from the participants

‘A very interesting opportunity to compare experiences and get different points of view.’

‘Very informative, informal and enjoyable. Extremely active participation thanks to excellent speakers.’

‘A great eye opener and enabler for networking.’

**Tallinn has hosted the last Regional Industrial Policy Seminar.
For latest updates on FOME activities, publications and events, please visit
[FOME website.](#)**

Stay tuned!

Further information:

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