



What is the Maker Movement?

Makers engage passionately with open hardware and open software technologies and are keen on creating new objects or developing cutting-edge and tech-driven projects (Dougherty, 2012). Recently, we have assisted to the development of a global “maker culture”, which emphasise values, ethos and behaviours such as open innovation, collaboration and self-empowerment.

Projects like Arduino have made open hardware more accessible and new facilities like fab labs and makerspaces have popped up across the globe, helping to develop off-line as well as on-line communities of practice.



...and Open Manufacturing?

Whilst the maker culture is spreading globally, new trends such as **open design** are emerging, making product and system designs available through public or shared resources (Green et al., 2017).

In this context, **open manufacturing** arises as a new approach using open source technologies and social innovation principles alike and applying them to governance, production and distribution processes in the manufacturing sector.

“ *Imagine that: a nation of innovation hobbyists working to make their lives more meaningful and the world a better place. Welcome to the maker revolution.* ”

- Mark Hatch -

Why does it matter?

Manufacturing in the EU employs around 30 million people, representing roughly 16% of the GDP and contributing to more than 80% of total exports. SMEs are at the core of the sector with around 2 million companies providing about the 59% of the total manufacturing employment.

Open manufacturing could represent a great opportunity for SMEs in Europe as digitisation will generate new challenges in terms of technology acquisition as well as new demands in terms of innovation dynamics. SMEs can embrace the innovation culture that the maker movement is spreading in different domains, as well as benefiting from the use of low-cost open hardware technologies in their digital transformation strategies.

OpenMaker: Bridging the Gap

OpenMaker aims to develop and strengthen partnerships between makers and manufacturers that can help Europe in its transition to Industry 4.0. OpenMaker works with policymakers to establish a collaborative ecosystem that can be beneficial to society at large. This is still an under-explored area of research where critical questions emerge about the different attitudes, values, barriers and incentives that these two groups of players face in working together.

Is the EU up for the challenge and ready to support makers and SMEs?

Europe competitiveness and possibility to address socio-economic challenges is at stake.

Hacking Policy for the Maker Movement

The EU Policy Framework

The core aims of the Maker Movement are perfectly in line with the EU current priorities.

Common goals are:

1. Encourage entrepreneurship and DIY (Do-it-Yourself) spirit, esp. among young people;
2. Apply open innovation and open source principles;
3. Enable integration of science, technology and economy.



The Maker Movement and the next Horizon Europe

Horizon Europe (HE) is the successor to Horizon 2020. In the next Multiannual Financial Framework (MFF), the HE's budget has grown to almost €100m.

HE will be built on three key pillars, one of which is 'open innovation', supported by a new European innovation council and described as a 'bottom up' approach to innovation.



In this context, the maker movement can be fundamental in driving the EU towards its three key innovation challenges: 1) Strengthen the EU's scientific and technological base; 2) Foster the EU's competitiveness and its innovation performance; 3) Deliver on the EU's strategic priorities and tackle global challenges.

What citizens say...

A recent Eurobarometer survey (2017) indicates that 75% of respondents believe that new digital technologies have a positive impact on the economy, 67% on their life standards, 64% on the overall well-being of society. However, the full extent of this impact needs to be carefully unlocked, managed and positively channelled: 41% of respondents think that the EU is best placed to take effective action to address the impact of the most recent digital technologies.

The research also highlights that people who already know about artificial intelligence tend to feel more positive about them, however only 35% of respondents feel that their digital skills are sufficient for their daily lives.

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CALL FOR ACTION

1. Which infrastructures and incentives are needed to establish an active dialogue between makers and manufacturers?
2. What are the key challenges faced by makers and manufacturers?
3. How can open manufacturing enhance productivity and competitiveness and, at the same time, generate positive social and environmental impact?
4. Who will benefit from open manufacturing and who will be negatively impacted?