

INSIGHT FROM PROJECT BEYOND 4.0: FROM PROJECT FINDINGS TO POLICY RECOMMENDATIONS¹



**Vassil Kirov, Bulgarian
Academy of Sciences**



**Gabriela Yordanova, Bulgarian
Academy of Sciences**



Steven Dhondt, TNO



Peter Oeij, TNO

In this blog, we summarise some core results of the BEYOND 4.0 analysis of regional entrepreneurial ecosystems – sets of interdependent actors and factors governed to enable productive entrepreneurship within a particular territory. Entrepreneurship is a crucial driver of economic change, with innovation, diffusion, and competition mechanisms. The impact of digitalisation depends on how such entrepreneurs implement and use technology themselves and collaborate with others. If a region can maintain innovative entrepreneurship, then while digitalisation may cause disruption, new start-ups and scale-ups create new jobs and economic growth.

To understand what will happen with work in the future, there is a need for a broader perspective on technology. The future of work cannot be deduced from an analysis of tasks. Growth in Europe is dependent on how regions use opportunities to conquer new markets and develop new products/services. Companies use the same technology in very different ways; the same technology can be adapted into different products and services. This means that digital transformation will lead to different scenarios. Regions can deal with technologies in a resilient way. At the same time, these technologies can be a recipe for economic disaster. Social and policy shaping is needed to ensure socially inclusive outcomes, especially in a context where social impacts have been exacerbated by the Covid-19 pandemic.

The BEYOND 4.0 research focused on understanding how ecosystems research could provide useful policy recommendations in the context of digital transformation. If technological transformation can be conceived as a race between work augmentation and work substitution, then regions have a role to play in steering this race. Regions have important leverage in the sense that they make decisions to develop and support sectors with economic potential.

BEYOND 4.0 sees (digital) technologies as socially shaped. This means that there is a space for regulation at different levels and by different actors/institutions. To understand these social forces, we need to look at history and understand how the long term matters. We also need to understand how institutions influence the selection and shaping of technologies. This perspective is needed to guide consistent, long-term policy.

BEYOND 4.0's understanding is that digital transformation should not be seen as a threat, but rather as an opportunity that should be guided toward socially inclusive results. Our core recommendations should be understood based on that principle.

¹ This text is part of Chapter 4, "Supporting the inclusive growth of ecosystems in the context of the digital transformation" from the forthcoming book *The Practical Side of Digital Transformation: A Tool Book for Practitioners*, Peter R.A. Oeij, Vassil Kirov, Egoitz Pomares (Editors). Sofia 2023, Prof. Marin Drinov Publishing House of Bulgarian Academy of Sciences.

> INSIGHT FROM PROJECT BEYOND 4.0: FROM PROJECT FINDINGS TO POLICY RECOMMENDATIONS¹

Preparing, attracting and preserving talent

In our analysis of entrepreneurial ecosystems, we learnt that all companies struggle to attract sufficient talent. Ecosystems' economic performance can be explained by their access to sufficient talent (Dhondt et al. 2022). Ecosystems have focused on two major pathways: to develop talent locally or attract talent internationally. In the case of the Dutch Brainport ecosystem, there has been a great deal of policy support to attract international talent. Each month, hundreds of internationals are allowed to work for local firms. Over the past decade, a lot of effort has been invested in redirecting local talent to technical education. By contrast, for a region such as Sofia most of the action has remained local. The city has been able to further support the existing pool of workers with excellent IT skills. These people understand the newest digital technologies. This growth of local IT specialists has worked as an attractor for many international companies. However, in the future Sofia will need to attract international talent to maintain the local growth of the ICT sector. Future success in any entrepreneurial ecosystem depends on finding a balance between developing local talent and attracting it from other regions and countries.

Boosting networks: a long-term mission

Entrepreneurial ecosystems show the importance of networks and networking between actors to support economic growth. This networking could take different forms, but should be based on a long-term, consistent supporting policy effort. As illustrated by the case of Sofia, European and national funding programmes have included the involvement of crucial ecosystems' stakeholders. Regional and local authorities and governments created arenas (e.g. discussions, forums) where stakeholders discussed issues and built trust to develop coherent long-term plans.

Crafting conditions and building on knowledge

Another lesson is that the focus should not be on managing digital transformation itself, but rather on stimulating companies to experiment with the most diverse technologies and new business models. Within entrepreneurial ecosystems, there should be room for experimentation and learning. Universities, research centres and companies need to collaborate to create this learning experience. One example is Sofia's municipal Sandbox for IT Technologies. This experimenting should be supported by targeted investment in key technologies, part of individual regions' smart specialisation. European policies should be directed to support such efforts, mainly in those EU regions that lag behind in the development of the knowledge-sharing economy.

Developing infrastructure is also needed in the context of digital transformation

Entrepreneurial ecosystems are only as strong as their physical and digital infrastructure. It is certain that in the context of digital transformation, digital infrastructure has become a crucial element for success. The availability of fast, reliable internet service has been pointed out as a precondition for the development of the Bulgarian ICT ecosystem. But other infrastructure elements may play a role in connecting companies and clients. Regarding the element of physical (and ICT) infrastructure, respondents from all regions/ecosystems state that multimodal physical infrastructure (road, rail, waterways, air) is sufficiently well-developed, even if most regions indicate congestion problems. Concretely, within the ecosystem perspective, regional authorities should analyse companies' concrete needs in order to target efforts and investments. Sometimes such efforts do not require substantial finance: e.g. optimisation of the public transport network to allow employees to get to particular office areas more easily, or development of concrete transport connections to ease the ecosystem's exchanges with international business partners.

Formal institutions: competence and rule of law

The final factor that drives growth of entrepreneurial ecosystems is the working of their formal institutions. Such institutions should be focused on creating a sharing environment. Major companies and self-interested politicians can easily destroy the fruits of collaboration; they can also weigh heavily on recruiting of local talent. The success of a region depends on the degree to which these companies can develop self-restraint. Politicians need to understand how formal institutions can deter future investments in the region. Institutional innovation should be focused on supporting the collaboration needed for inclusive growth. In this respect, European regions should stay curious and sensitive about institutional innovations that can inspire others.



UNTANGLED is a three-year interdisciplinary Horizon 2020 research project that seeks to examine the interconnected trends of globalisation, demographic change and technological transformation, and their effects on labour markets in the European Union and beyond. By engaging a broad range of stakeholders, including companies and civil society organisations, we will develop practical policy proposals to help governments cushion the negative impacts of these trends and ensure their benefits are enjoyed fairly across regions and sectors.

Follow us on social media:



twitter.com/untangledEU



facebook.com/UntangledEU



linkedin.com/company/project-untangled-eu

www.projectuntangled.eu

The views expressed in this newsletter are those of the authors and do not necessarily reflect those of the European Commission.