CHAPTER 1

INTRODUCTION TO THE TOOL BOOK

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1. PURPOSE, BACKGROUND AND TOPICS

Purpose

The European comparative research project BEYOND4.0 studied the situations of twelve ecosystems in six countries (in Work Package 4: Digital Transformation: regional perspectives and prospects), and of 30 companies (in Work Package 8: Company strategies for leading economic and social performance), with the intention to understand the development of digital transformation and its socio-economic consequences, i.e. the economic and social effects on inclusive economic growth (Warhurst et al., 2020). The purpose of Deliverable D8.2 (Toolbook on inclusive R&D&I Policy) is to transform the findings, insights and experiences into a tool book for practitioners about digital transformation that respects inclusiveness.

A tool book implies step-by-step plans to arrive at digital transformation and inclusive growth. This publication covers practical approaches for policy-makers, practitioners and consultants working at the level of regions (i.e. ecosystems) and companies. Since regions and companies are unique entities with specific circumstances, the presented approaches are of course no cut-and-dried solutions, but guidelines for the targeted practitioners.

Economic growth, inclusiveness and ecosystems

BEYOND4.0 supports an inclusive policy, which is a multi-level policy reaching any company, industry, region or ecosystem to develop evidence-based innovative, working solutions, in which relevant stakeholders, such as employees, are included in this process of innovation and co-benefit from the effect(s) of these innovations. Inclusiveness implies that interests of stakeholders are accounted for by policies that emphasize equality, diversity and sustainability, also with regard to digital transformation. Stakeholders for inclusiveness within companies are employees. But at a societal level a more broad view can be adopted including other stakeholders such as job seekers, unemployed people,

students and target groups with a weaker labour market position. The inclusiveness we point to is human-centred, and strives after balancing economic, social and technological aspects. From our understanding digital transformation, i.e. uptake and adoption of new (digital) technologies, is considered successful when both the economic and social goals are met. This is in line with the 'high road perspective'.

For that purpose, in the BEYOND4.0 project we have been using the lens of a so-called 'ecosystem model' to look at regions and companies, and the digital transformation. From the results of the study of BEYOND4.0, carried out at the level of ecosystems and companies, we have been able to understand how these ecosystems and companies behave in relation to each of the ten elements that make up the entrepreneurial ecosystems model (EES) (Figure 1; Stam, 2015).
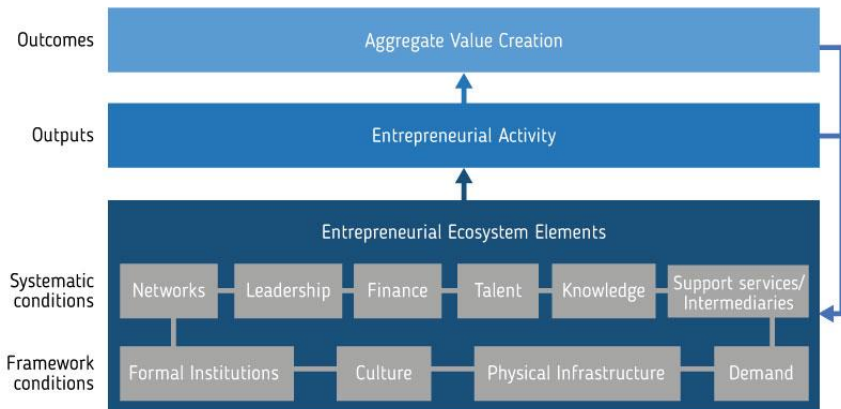

Figure 1: The entrepreneurial ecosystem and its elements, based on Stam (2015)

In connection with the EES model the presence of sound institutional arrangements (formal institutions, entrepreneurial culture, corporation and networks) seem to be a necessary condition. This counts as well for certain resource endowments, such as talent (skilled labour), entrepreneurial leadership and a developed knowledge and educational infrastructure (for R&D and innovation). Their presence is essential for economic success.

One additional element is to stimulate and facilitate inclusiveness at the level of industrial sectors and inside companies. This inclusiveness refers to the involvement and engagement of employees, job seekers, students and of people who differ in age, race, gender, nationality, etc. At the level of companies, for example, this implies voice for employees with regard to the implementation of digital technology; and at the level of an industrial sector or region it means taking into account the interest of the employed and

unemployed labour force and social inclusion. In other words the implementation of digitalisation avoids technological determinism and seeks high road solutions instead of low road solutions (Warhurst et al., 2020).

In this tool book we present approaches that can help practitioners to improve the possibilities for digital transformation of ecosystems and companies to become inclusive growth entities. By applying the guidelines and recommendations of the various chapters practitioners can get an answer to questions like these:

- How do ecosystems and companies perform on the elements of the EES model?

- How do ecosystems and companies integrate and implement new digital technology?

- How do ecosystems and companies make inclusiveness concrete and tangible?

- How do ecosystems and companies translate their strategy into policies and actions?

- How can practitioners and policy makers make use of the finding of the BEYOND4.0 project?

2. CONTENT OF THE TOOL BOOK

Seven chapters of members of the BEYOND4.0 consortium contain practical approaches, instruments, tools and tips.

Chapter 2 (by Peter Oeij & Gerben Hulsegge) offers a Theory of Change (ToC), which is a description and illustration of how and why a desired change is expected to happen given a particular context. In our case this change is to optimise digital transformation and inclusive growth. The authors sketch two routes to that goal. One is at the regional level, and describes a 'collaborative ecosystem approach'. The other one is at company level, and promotes using the concept of 'sociotechnical systems design and workplace innovation'. To make these two routes more practical, the authors present three tools: a 'process' of practical steps, a checklist, and a dialogue approach to assist practitioners in designing their own approaches at both levels.

Chapter 3 (by Carlota Perez) presents a pattern of technological revolutions, based on historical insights. Such a pattern is seen as helpful with regard to the present ICT revolution, namely to reap the full potential in bringing about a sustainable global golden age for the information society. History shows that most effective way of succeeding with the opportunities opened by this revolution is applying multi-level governance. It addresses

policymakers and business leaders at the local and regional level, as much as at the national and supranational ones in offering them a 'big picture' how to move forward.

Chapter 4 (by Vassil Kirov, Gabriela Yordanova, Steven Dhondt & Peter Oeij) extracts learning from the impact of the digital transformation on the functioning of ecosystems, on inclusive growth, and the respective implications for the future of work. It explicates which of the elements of the entrepreneurial ecosystem model contribute to economic growth and inclusiveness in the examined regions. The chapter presents policy recommendations for practitioners based on these findings.

Chapter 5 (by Asier Lakidain, Egoitz Pomares & Alfonso Unceta) illustrates how changes can be supported by consensual and government actions, with the purpose of adopting digitalisation in the most inclusive possible way. By taking workplace innovation programmes as a reference, the chapter presents that incorporating a variety of agents with common objectives is essential for successful change. The authors point out the conditioning factors that make the design and implementation of such actions possible.

Chapter 6 (by Sally Wright & Sally-Anne Barnes with Clara Behrend, Michael Kohlgrüber & Adrian Götting) illustrates a categorisation of skills that become important in light of digital transformation. There are four transversal skills (digital, personal, social and methodological skills), next to job-specific skills related to concrete work tasks and work experience. In addition the authors point out to interacting skills, which means that skills from at least two apparently separate skill categories are needed to perform a task competently. The authors offer practical steps that HR professionals and functional managers in companies can take to implement such skills in response to digital transformation.

Chapter 7 (by Olli Kangas & Esa Karonen) deals with the successful transition in a Finnish ecosystem. After the collapse of the core company the area rapidly rose from its ashes. The core of the revival was a disruptive economic restructuring by shifting to other products and services. The combination of the presence of a skilled labour force and an innovative collaboration between the local government, employment services, other public authorities, universities, university hospital, and private sector entrepreneurs was the key to success. The authors offer learnings in terms of the elements of the ecosystem model that proved to contribute strongest to the miraculous digital transition.

Chapter 8 (by Peter Oeij & Gerben Hulsegge) is the closing piece and describes a scenario approach to stimulate digitalisation and inclusive economic growth. The authors illustrate how such an approach can be developed, by using the example that was applied in the workshops carried out in the BEYOND4.0 project. Scenario approaches are seen as a tool for change, in our case, a successful digital transformation. The chapter sketches the steps to be taken and how to design the process of making the scenarios discussable.

3. EPILOGUE

While the tool book presents a practical approach to societal challenges such as digital transformation and inclusive growth, other project deliverables disclose the scientific research findings that describe and explain these processes and developments, guided by historical and social scientific perspectives. In addition to the set of Policy Briefs we have published, the main scientific deliverables are listed at the end of this introduction. All publications and Policy Briefs can be found on the website: www.beyond4-0.eu (active until 2026). In 2023 a final publication will appear, namely a scientific account of the project in an edited book, entitled 'Inclusive technological change' (working title), and containing different chapters from the various work packages.

The editors of this book would like to acknowledge the contributions made by the BEYOND4.0 project research team, as well as the companies and countless stakeholders with whom we have conducted our research.

REFERENCES / DELIVERABLES

The main deliverables written in Work Packages 4 and 8 are:

Dhondt, S., Dekker, R.. Van Bree, T., Hulsegge, G., Oeij, P., Barnes, S.-A., Götting, A., Kangas, O., Karonen, E., Pomares, E., Unceta, A., Kirov, V., Kohlgrüber, M., Wright, S., Yordanova, G. and Schrijvers, M. (January 2022). *Regional report: entrepreneurial ecosystems in six European countries.* (Report D4.1 Analysis of incumbent and emerging ecosystems in Finland, Bulgaria, Spain, Germany, United Kingdom, and The Netherlands). Sine Loco: BEYOND4.0. (Retrieved from: https://beyond4-0.eu/publications).

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Two other important references are:

Stam, E. (2015), Entrepreneurial Ecosystems and Regional Policy: A Sympathetic Critique. *European Planning Studies* 23(9): 1759-1769.

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