



EUROPEAN WEEK OF
REGIONS & CITIES

2003 - 2022

New Challenges for
Europe's Cohesion

Digital Transformation: Policy workshop for regional perspectives and prospects



TNO innovation
for life



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2023 - 2022

New Challenges for
Europe's Cohesion

Moderator of the workshop
Scientific Coordinator of the BEYOND4.0 (H2020) Project



Prof. Dr. Steven Dhondt
Senior research scientist
Netherlands Organisation for Applied Scientific Research

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**New Challenges for
Europe's Cohesion**

Introduction to Beyond4.0

BEYOND 4.0 aims to help deliver an inclusive European future by examining the impact of the new technologies on the future of jobs, business models and welfare.

BEYOND4.0 has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 822296.

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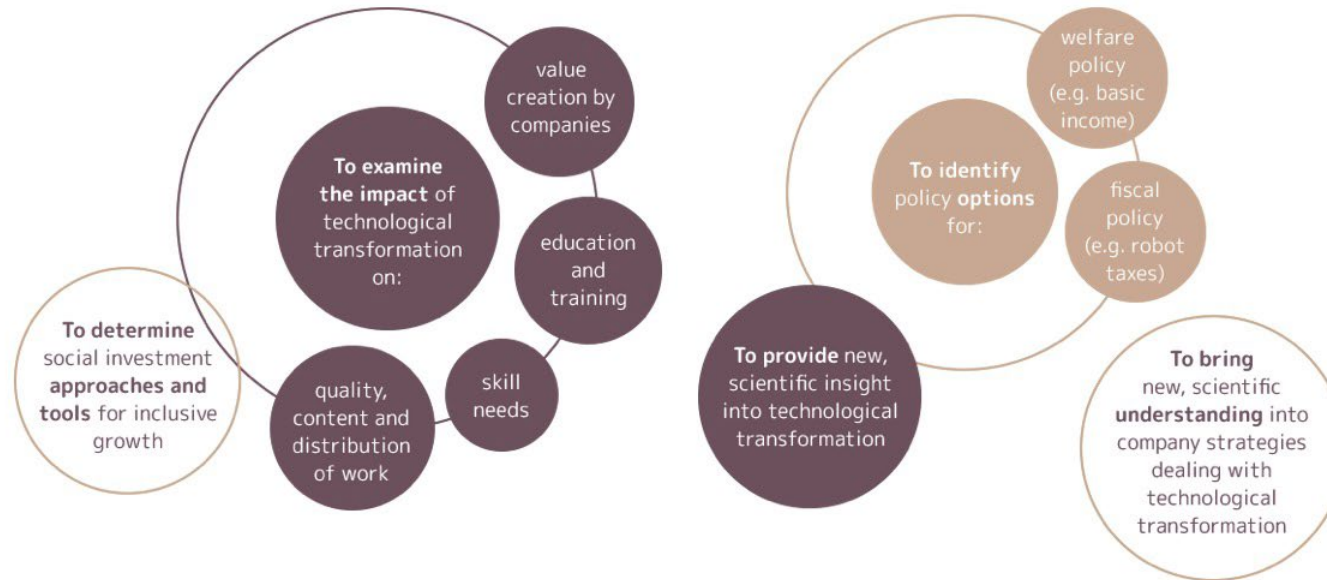


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New Challenges for Europe's Cohesion

Beyond4.0 Project objectives



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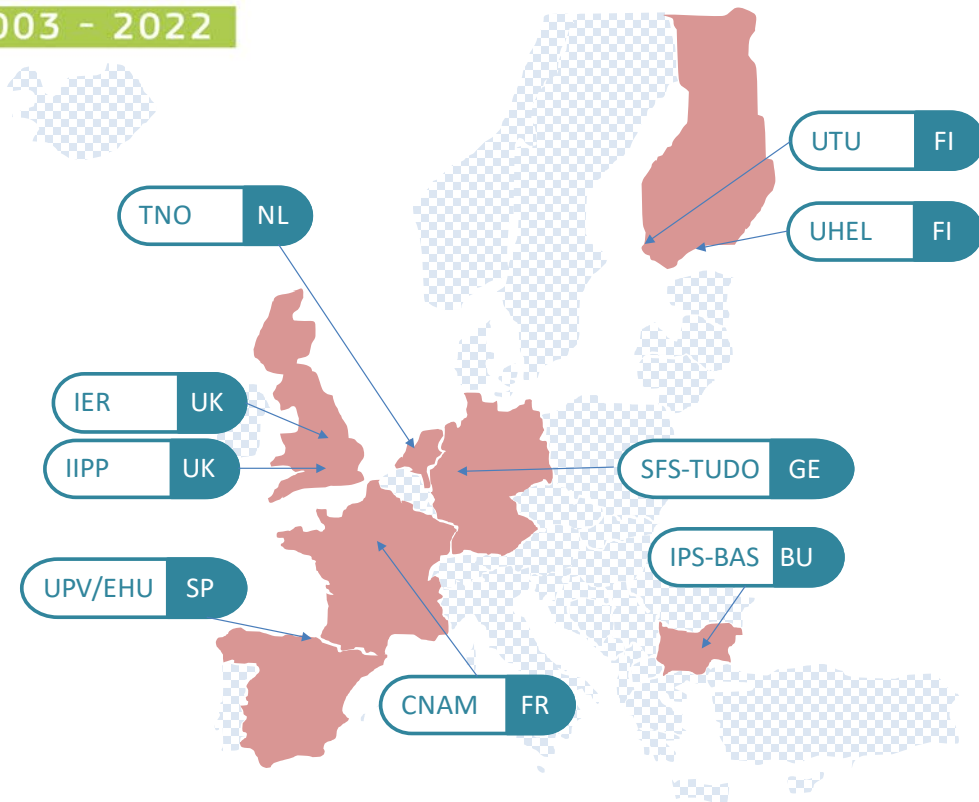


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Beyond4.0 Project Consortium

New Challenges for
Europe's Cohesion



- Department of Social Research, University Of Turku, Finland
- Institute for Employment Research, University of Warwick, UK
- Institute of Philosophy and Sociology - Bulgarian Academy of Sciences, Bulgaria
- Le CNAM-CEET, France
- Netherlands Organisation for Applied Scientific Research, TNO, Netherlands
- Technische Universität Dortmund, Sozialforschungsstelle Dortmund, Germany
- UCL Institute for Innovation and Public Purpose, London, UK
- University of Helsinki, Finland
- University of the Basque Country - Sinnergiak Social Innovation, Basque Country, Spain

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New Challenges for Europe's Cohesion

Framework of the workshop

1. Entrepreneurial Ecosystems Framework
2. Examples of regional entrepreneurial ecosystems
3. Presentation of policy recommendations
4. Guided discussion

Researchers



Mirella Schrijvers
Researcher
Utrecht University



Peter Oeij
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Egoitz Pomares
Researcher
UPV/EHU



Vassil Kirov
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Question?

What policies can the European Union develop to support the further development of "entrepreneurial ecosystems" and stimulate inclusive growth in regions across the EU?

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- Regional report:
entrepreneurial ecosystems in
six European countries

D4.1 Analysis of incumbent and
emerging ecosystems in Finland,
Bulgaria, Spain, Germany, United
Kingdom, and The Netherlands

Author(s): Steven Dhondt, Ronald Dekker, Thijmen van Bree, Gerben
Hulsegge, Peter Oeij, Sally-Anne Barnes, Adrian Götting, Olli Kangas, Esa
Karonen, Egoitz Pomares, Alfonso Unceta, Vassil Kirov, Michael
Kohlgrüber, Sally Wright, Gabriela Yordanova and Mirella Schrijvers

Date: January 2022; version 1.0

Associated Work Package: WP4

Deliverable: D4.1

beyond4.0.eu



This project has received funding from the European Union's Horizon 2020
research and innovation programme under grant agreement No 8222296.

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- Policy paper: digital
transformation and regional
policy options for inclusive
growth

/Deliverable No. D4.2

Update version 1 (M40)

Author(s): Peter Oeij, Gerben Hulsegge, Vassil Kirov, Egoitz Pomares,
Steven Dhondt – with Sally-Anne Barnes, Clara Behrend, Ronald Dekker,
Adrian Götting, Olli Kangas, Esa Karonen, Erika Kispeter, Michael
Kohlgrüber, Bagryan Malamin, Alfonso Unceta, Sally Wright

Date: version 1.0 – August 2022

Associated Work Package: WP4

Deliverable: D4.2

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**New Challenges for
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Framework of the research

Regions selected for analysis include:

- Salo & Oulu (Finland)
- Brainport Eindhoven (Netherlands)
- Sofia (Bulgaria)
- West-Midlands (United Kingdom)
- Rhine-Ruhr (Germany)
- Basque Country (Spain)

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Objectives of the study

- The study uses the perspective of Stam & Spigel (2018) on the entrepreneurial ecosystem. These are seen as 'a set of interdependent actors and factors that are governed to enable productive entrepreneurship within a particular territory'.
- Ten elements play a role in creating value through entrepreneurial activity (Stam, 2015).
- The analysis departs from the logic that elements in an ecosystem are substitutable, and there are many different possible pathways to a high-performing entrepreneurial ecosystem (Schrijvers, Stam and Bosma, 2021).

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Mirella Schrijvers
Researcher
Utrecht University

What are entrepreneurial ecosystems?

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Entrepreneurial Ecosystems Framework

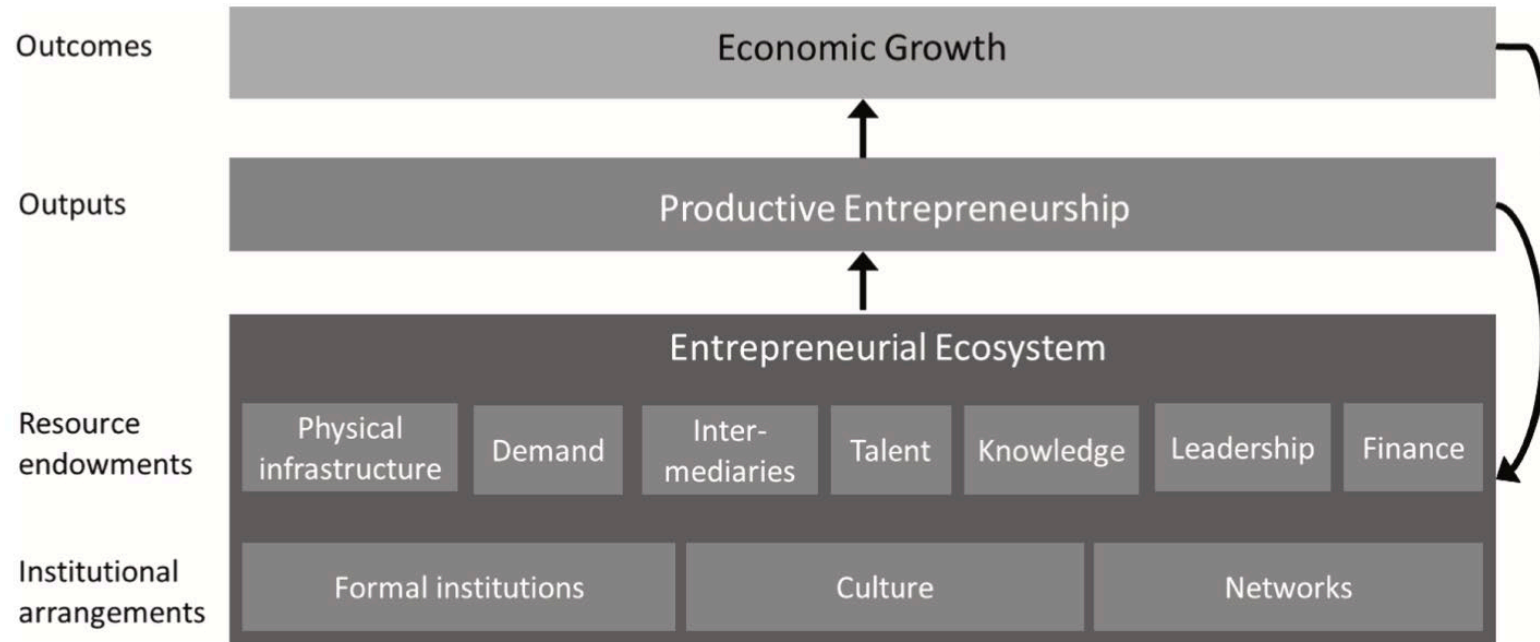


Figure adapted from Stam and Van de Ven (2021)



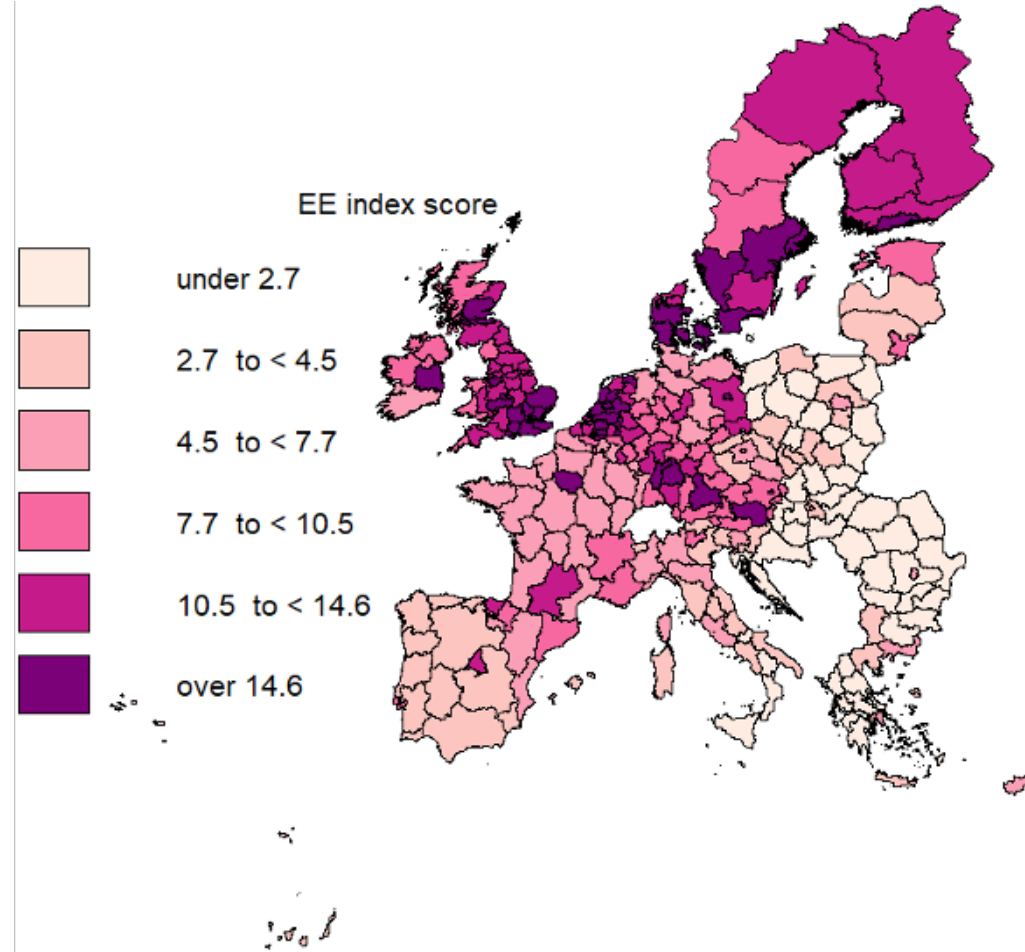


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Spread in regional performance



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Policy takeaways

- Need a holistic view, interdependencies and feedback are important
- Build on regional strengths
 - Learn from regions which have similar characteristics
 - Data-driven policy insights
- Stakeholder approach
 - 'There is no leader of entrepreneurship'
- Go beyond the focus on start-ups, especially consider support for scaleups
- The framework can be adjusted to take into account other goals, e.g. sustainability or social inclusion

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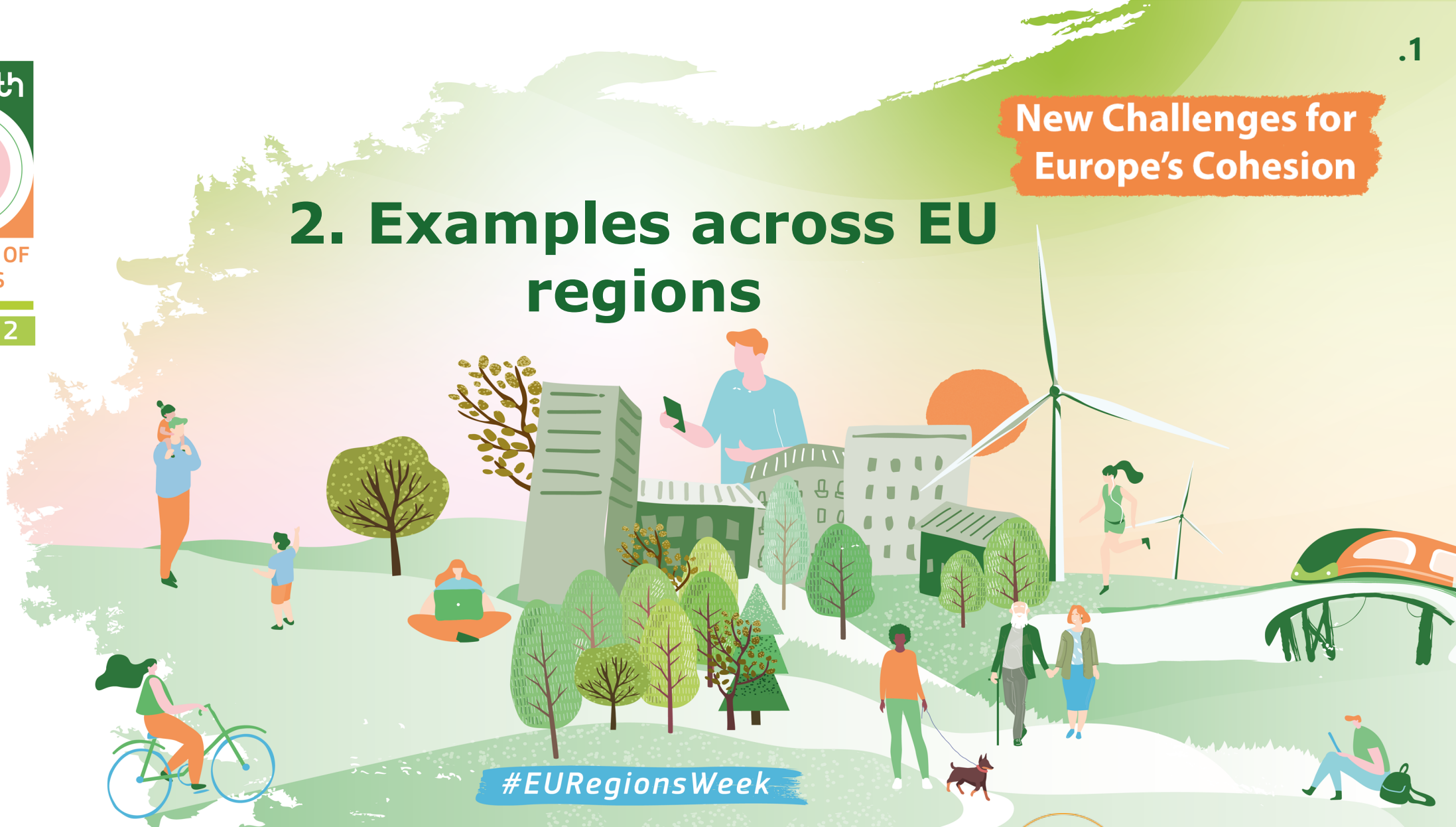


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2. Examples across EU regions



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New Challenges for Europe's Cohesion



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Selected regions and ecosystems

Country	Region	Incumbent Ecosystem	Emergent Ecosystem
Netherlands	North Brabant	Advanced Manufacturing	Aerospace
Bulgaria	Sofia	ICT	Outsourcing
Spain	Basque Country	Machine-tool	Sustainable and Intelligent Mobility

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New Challenges for
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Rationale – Incumbent Ecosystems

- **Netherlands - Zuidoost Noord-Brabant: Advanced manufacturing**

Advanced manufacturing has taken over the role as the dominant business ecosystem. This sector is at the core of the Dutch Smart Industry (or Industry 4.0).

- **Bulgaria – Sofia: ICT sector**

The continuous growth of ICT, branching out. This is not an industry sector, but the focus is on supplying industrial ICT solutions to the whole of Europe and North America. In this sense, they are driving Industry 4.0 efforts.

- **Spain - Basque Country: Machine tool**

This sector is also slowly declining in size, but still the most important business ecosystem in the region. The machine tool is representative of Industry 4.0 in Spain.

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Rationale – Emergent Ecosystems

- **Netherlands - Zuidoost Noord-Brabant: Aerospace**

Digital technologies are slowly integrating into mainly manual production (maintenance). Digital driven business models are only being considered. The sector is only in the development phase.

- **Bulgaria – Sofia: Outsourcing**

Digital technologies are well present and in development. The ecosystem is digitally minded but lags behind in data-driven business models

- **Spain - Basque Country: Smart Mobility**

Digital technologies are well embedded in the whole ecosystem. The sector is in the process of implementing new business models based on digitalisation.

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Peter Oeij
Senior Research Scientist
TNO

**New Challenges for
Europe's Cohesion**

Incumbent Ecosystem Netherlands: Brainport
Main industry: Advanced manufacturing
Core company: ASML (semiconductor industry, lithography)

Driving factors

Limiting factors

Internal characteristics of the ecosystem

Strong and historically grounded NETWORKS and ENTREPRENEURIAL CULTURE; strong industrial LEADERSHIP

Slow functioning FORMAL INSTITUTIONS, stressed digital and mobility INFRASTRUCTURE and shortage of housing for expats

External environment of the ecosystem

Strengthen collaboration with other EU NETWORKS to broaden markets

Competition over TALENT and qualified personnel; (NEW) KNOWLEDGE digital software needs to be developed much faster [apart from market restrictions and price effects caused by international conflicts]





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New Challenges for Europe's Cohesion

Incumbent Ecosystem Netherlands: Brainport
Main industry: Advanced manufacturing
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Impact on economic growth:

- (high) growth in industry, transport; stability in IT
- stability in technology and knowledge intensive jobs; shrinking unemployment
- innovation-driven region

Impact on inclusiveness

- selective employment situation, gendered, skill levels and wage disparities
- situation improves for women
- risk of poverty and social exclusion very low

	Driving factors	Limiting factors
Internal characteristics of the ecosystem	Strong and historically grounded NETWORKS and ENTREPRENEURIAL CULTURE; strong industrial LEADERSHIP	Slow functioning FORMAL INSTITUTIONS, stressed digital and mobility INFRASTRUCTURE and shortage of housing for expats
External environment of the ecosystem	Strengthen collaboration with other EU NETWORKS to broaden markets	Competition over TALENT and qualified personnel; (NEW) KNOWLEDGE digital software needs to be developed much faster <small>(apart from market restrictions and price effects caused by international conflicts)</small>





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Peter Oeij

Senior Research Scientist
TNO

Emergent Ecosystem Netherlands: Aerospace
Main industry: Maintenance of aircrafts
Core company: Fokker Technology
(maintenance, repair & overhaul)

New Challenges for Europe's Cohesion

Driving factors

Limiting factors

Internal characteristics of the ecosystem

Unique location for collaboration and building NETWORK of civilian and military maintenance industry

No clear industrial LEADERSHIP, lacking consensus regards FINANCE, slow and weak collaboration between FORMAL INSTITUTIONS and stakeholders

External environment of the ecosystem

After COVID re-start in aviation and re-build-up of NATO to broaden markets

Lack of ENTREPRENEURSHIP CULTURE and silo thinking [apart from market restrictions and price effects caused by international conflicts]





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New Challenges for Europe's Cohesion

Impact on economic growth:

-attracting new business (slowly)

Impact on inclusiveness:

-creation of jobs

-no significant effect on Equality, Diversity, Inclusiveness (EDI) yet

	Driving factors	Limiting factors
Internal characteristics of the ecosystem	Unique location for collaboration and building NETWORK of civilian and military maintenance industry	No clear industrial LEADERSHIP, lacking consensus regards FINANCE, slow and weak collaboration between FORMAL INSTITUTIONS and stakeholders
External environment of the ecosystem	After COVID re-start in aviation and re-build-up of NATO to broaden markets	Lack of ENTREPRENEURSHIP CULTURE and silo thinking <small>[apart from market restrictions and price effects caused by international conflicts]</small>





Vassil Kirov
Associate Professor
Bulgarian Academy of
Sciences

New Challenges for Europe's Cohesion

Incumbent Ecosystem Bulgaria: Sofia
Main industry: ITC

Driving factors

Limiting factors

Internal characteristics of the ecosystem

Talent
Relatively well-developed infrastructure
Access to EU funds and instruments

A captured state, high level of corruption in the country as a whole.

External environment of the ecosystem

Global demand - access to more complex projects with added value and development of Bulgarian multinationals in the ecosystem.
Understanding of technical challenges and customer needs.

Price competition from low-wage destinations (e.g. Eastern Asia or former soviet republics)
Shortage of skilled labour
Emigration and brain drain





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New Challenges for Europe's Cohesion

Incumbent Ecosystem Bulgaria: Sofia Main industry: ITC

Impact on economic growth:

Strong economic and employment growth

Impact on inclusiveness:

The ecosystem is inclusive in terms of the creation of high-quality jobs, to women and youth, and especially retaining youth in the country/region

Driving factors

Limiting factors

Internal characteristics of the ecosystem

Talent
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**New Challenges for
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Emergent Ecosystem Bulgaria: Outsourcing

**Internal
characteristics of the
ecosystem**

**External environment
of the ecosystem**

Driving factors

Talent (ICT skills and languages)
Relatively good infrastructure
Active network of the companies within the ecosystem

Access to more complex projects with added value.
Strong global demand and increasingly competitive position.
More active support from the national administration and Sofia Municipality.

Limiting factors

A captured country, high level of corruption in the country as a whole.
An administration and management style that is not always supportive enough.

Relocation of companies or their activities to other Bulgarian cities or destinations with lower wages.
Automation of tasks and job cuts.
Entrepreneurial-driven leadership with foreign influence limited clear local visions





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New Challenges for Europe's Cohesion

Emergent Ecosystem Bulgaria: Outsourcing

Impact on economic growth:
High growth of output and employment

Impact on inclusiveness:
Inclusiveness in terms of women, older workers,
foreign nationals

Internal characteristics of the ecosystem

External environment of the ecosystem

Driving factors

Talent (ICT skills and languages)
Relatively good infrastructure
Active network of the
companies within the ecosystem

Access to more complex
projects with added value.
Strong global demand and
increasingly competitive
position.
More active support from the
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Limiting factors

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Egoitz Pomares
Researcher
UPV/EHU

**New Challenges for
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Incumbent Ecosystem Spain: Basque Country
Main industry: Machine Tool

**Internal
characteristics of
the ecosystem**

**External
environment of the
ecosystem**

Driving factors

Strong institutional context (formal institutions).
Leadership (public-private cooperation)
Enough talent and labour supply
Strong network.

Highly specialized and internationalized demand

Limiting factors

Finance limitations
Entrepreneurship limitations

Highly competitive markets (Digitalisation)





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Researcher
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New Challenges for Europe's Cohesion

Incumbent Ecosystem Spain: Basque Country **Main industry: Machine Tool**

Impact on economic growth:

The Basque country's employment is shifting towards more ICT jobs, technology, and knowledge-intensive sectors.

Impact on inclusiveness:

Polarized job market; Machine tool is declining in size and changing in the type of jobs. The development is equal for men and women.

Driving factors

Limiting factors

Internal characteristics of the ecosystem

Strong institutional context (formal institutions).
Leadership (public-private cooperation)
Enough talent and labour supply
Strong network.

Finance limitations
Entrepreneurship limitations

External environment of the ecosystem

Highly specialized and internationalized demand

Highly competitive markets (Digitalisation)





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**New Challenges for
Europe's Cohesion**

Emergent Ecosystem Basque Country: Sustainable Mobility

	Driving factors	Limiting factors
Internal characteristics of the ecosystem	Strong insitutional context and public initiatives Enough knowledge	Entrepreneurship model Weak financing (based on demand)
External environment of the ecosystem	Production model transformation due to new models; niche markets	Strong competition on the international level

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Researcher
UPV/EHU

New Challenges for Europe's Cohesion

Emergent Ecosystem Basque Country: Sustainable Mobility

Impact on economic growth:

Emergent new market niches and creation of value;
public-private cooperation

Impact on inclusiveness:

Potential for the creation of new (inclusive) direct
jobs in sectors related to new technologies

**Internal
characteristics
of the
ecosystem**

**External
environment
of the
ecosystem**

Driving factors

Limiting factors

Strong institutional context
and public initiatives
Enough knowledge

Entrepreneurship model
Weak financing (based on
demand)

Production model
transformation due to new
models; niche markets

Strong competition on the
international level

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3. Policy recommendations





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Incumbent Ecosystems – Policy recommendations

- 1 Collaboration between stakeholders in ecosystems should be stimulated
- 2 Stimulating inter-firm exchange on digital technology use and development
- 3 The digital transformation of regions will only succeed if more funds are provided

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**New Challenges for
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Emergent Ecosystems – Policy recommendations

- 1 Develop coherent funding possibilities for entrepreneurs
- 2 Support teaming-up of stakeholders in region to develop more talent
- 3 Identify and support leading companies to align regional actions
- 4 Guide unexperienced entrepreneurs to set-up business

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4. Guided discussion



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**New Challenges for
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**28.03.2023
save the date**

● Beyond4.0 final conference will be held in Brussels. We will talk about the future of work and technology in the times of Industry 5.0. More info coming soon.

Looking forward to seeing you at the conference!

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