Interreg Europe

Co-funded by the European Union

AccelerateGDT

Enhancing SME Competitiveness: Leveraging Cluster Policies for the Twin Transition

Alessio Giustolisi
alessio.giustolisi@univie.ac.at

14 November 2021 | Vienna

technopolis group

*"[…] **geographic concentrations** of interconnected companies, specialized suppliers, service providers, firms in **related industries** and associated institutions […] in particular a field that **compete** but also **co-operate**."*

(Porter 2000)

Clusterplattform Österreich

https://www.bmaw.gv.at/Themen/Wirtschaftsstandort-Oesterreich/ClusterplattformOesterreich.html

Cluster nach Regionen

Österreichweit

- Handelsverband Ö
- Hydrogen Austria - der österreichische Wasserstoff Cluster
- Kreativwirtschaft Austria
- Life Science Austria (LISA)
- RENOWAVE.AT – Innovationslabor für klimaneutrale Sanierungen
- Verein Netzwerk Logistik OÖ

Burgenland

- Austrian Water
- IG Passivhaus+
- Kunststoff-Cluster Burgenland

Kärnten

- Silicon Alps
- Software Internet Cluster

Niederösterreich

- Bau.Energie.Umwelt Cluster NÖ
- Elektromobilitätsinitiative des Landes Niederösterreich "e-mobil in Niederösterreich"
- Kunststoff-Cluster NÖ
- Lebensmittel Cluster NÖ
- Mechatronik-Cluster NÖ
- Plattform für Gesundheitstechnologie
- Plattform für Green Transformation & Bioökonomie
- Plattform für Luft- und Raumfahrt
- Technopol Krems: Internationales Zentrum für Gesundheitstechnologien
- Technopol Tulln: Zentrum für biobasierte Technologien
- Technopol Wieselburg: Zentrum für Bioenergie, Agrar- und Lebensmitteltechnologie
- Technopol Wr. Neustadt: Zentrum für Medizin- und Materialtechnologien

Oberösterreich

- Automobil-Cluster OÖ
- Clean-Tech-Cluster OÖ – Energie
- Cleantech-Cluster OÖ - Umwelt
- Fachkräftesicherung und HR-Management
- International BlockChain Cluster
- IT-Cluster
- Kunststoff-Cluster OÖ
- Kunststoff-Cluster OÖ in Kooperation mit ITG Salzburg
- Lebensmittel-Cluster OÖ
- Mechatronik-Cluster
- Medizintechnik-Cluster
- Building Innovation Cluster
- Netwerk Metall

Salzburg

- Automobil-Cluster OÖ in Kooperation mit ITG Salzburg
- GIS Cluster Salzburg
- Holzcluster Salzburg
- Kunststoff-Cluster OÖ in Kooperation mit ITG Salzburg
- Medizintechnik-Cluster Salzburg

Steiermark

- ACIB - Austrian Centre of Industrial Biotechnology
- ACstyria
- ARGE Plattform Automatisierungstechnik Steiermark
- BioNanoNet Forschungsgesellschaft mbH
- Creative Industries Styria
- Materials Cluster Styria
- Photonik Austria
- Silicon Alps Cluster GmbH
- Styrian Food Hub
- Styrian Service Cluster

Tirol

- Cluster Erneuerbare Energien Tirol
- Cluster Informationstechnologien Tirol
- Cluster Life Sciences Tirol
- Cluster Mechatronik Tirol
- Cluster Wellness Tirol
- kreativ.land.tirol
- pro Holz Tirol/Holzcluster

Vorarlberg

- smart-textiles Plattform
- VEM Vorarlberger Elektro- und Metallindustrie
- vai - Vorarlberger Architektur Institut
- Verpackungsland Vorarlberg

Vorarlberg

- smart-textiles Plattform
- VEM Vorarlberger Elektro- und Metallindustrie
- vai - Vorarlberger Architektur Institut
- Verpackungsland Vorarlberg
- werkraum bregenzerwald

Wien

- AAC - Austrian Agricultural Cluster
- AAI - Austrian Aeronautics Industries Group
- ATC- Austrian Technologie Corporation
- ATTC - Austrian Traffic Telematics Cluster
- E.C.E.X.A.
- Grünstattgrau
- Innovative Gebäude
- Life Science Austria Vienna (LISAvienna)
- Schwerpunkt Smart ICT
- Schwerpunkt Smart Production
- Schwerpunkt Smart Solutions
- SENA – Social Entrepreneurship Network Austria

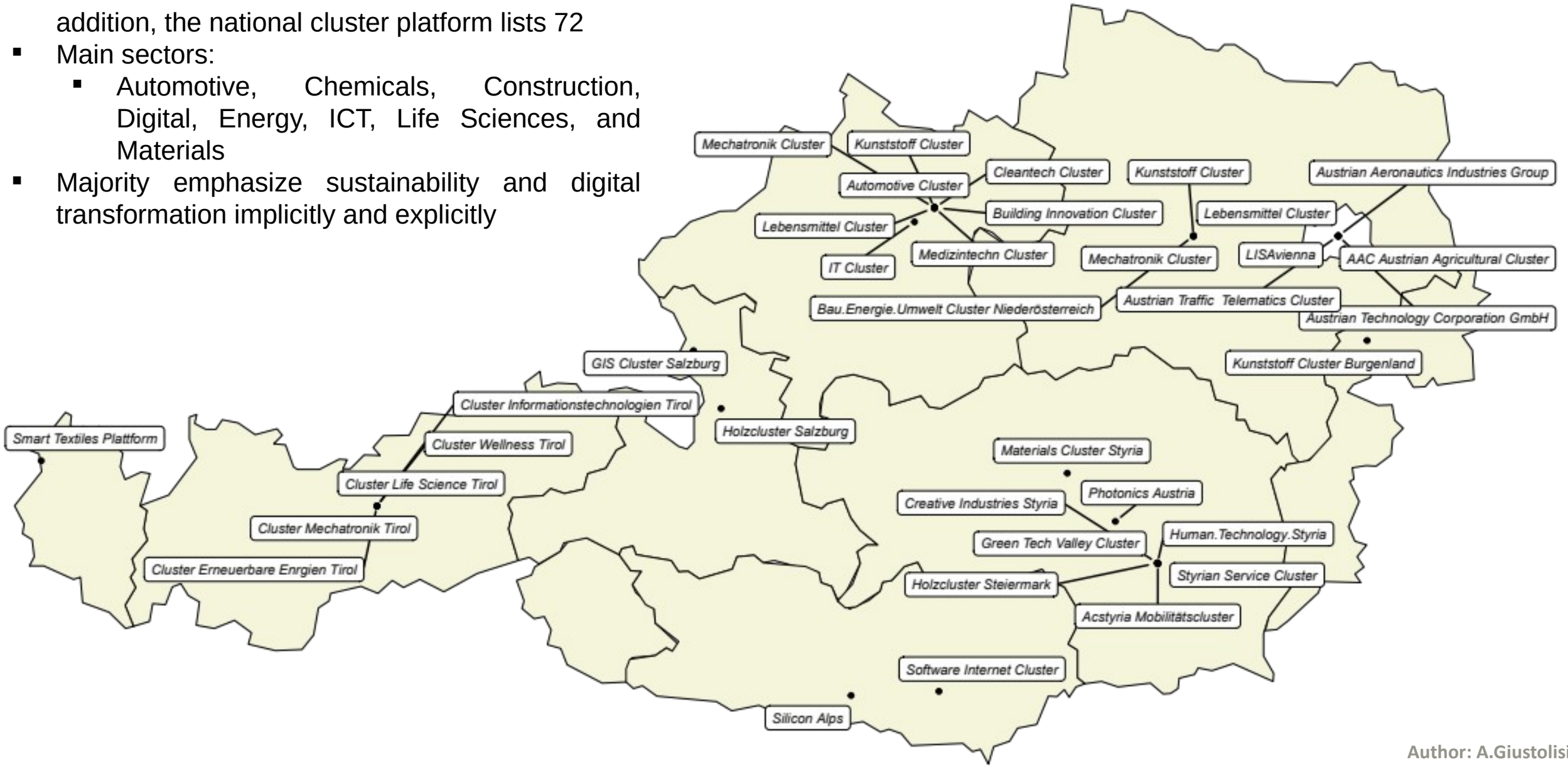
Contrasting Clusters and Networks

	Clusters	Networks
Geographical Concentration	Firms are physically close to each other	Not required: members can be dispersed
Industry Specificity	Focused on a single industry or related sectors	Can span across various industries
Interaction	Competition and cooperation	Primarily based on cooperation without competitive forces
Membership	Can benefit both active and passive participants	Generally requires active engagement for benefits
Synonymity	Clusters can encompass networks	Networks are a part of clusters but not equivalent to them

Sources: CRIE and Technopolis 2015

Austria Cluster Ecosystem

- We identified 37 with cluster structures in addition, the national cluster platform lists 72
- Main sectors:
  - Automotive, Chemicals, Construction, Digital, Energy, ICT, Life Sciences, and Materials
- Majority emphasize sustainability and digital transformation implicitly and explicitly



Austrian Cluster Ecosystem

- Austria's cluster ecosystem has flourished from the 1990s onward
- Mostly managed by Regional Development Agencies (e.g., Tyrol, Upper Austria, Lower Austria, Styria, ...)
- Important factor for Austria’s successful implementation of smart specialization strategies

Financing Instruments for Clusters in Austria

- **Private Financing**
  - Source: Membership fees

- **Public Financing**
  - Financed by Federal States
  - Co-fundud by EFRD Funds, Ministries, Austrian Research promotion Agency (FFG) and other entities

Guiding Clusters Towards a Sustainable Future

- Caution: Sectoral Clusters may lead to extended stagnation due to their industry lifecycle
- Diversification and continuous learning are important
- Embracing openness is key: Cultivate collective efforts and an expansive view of innovation
- Prioritizing **Twin Green and Digital Transition** is essential to navigate forthcoming challenges

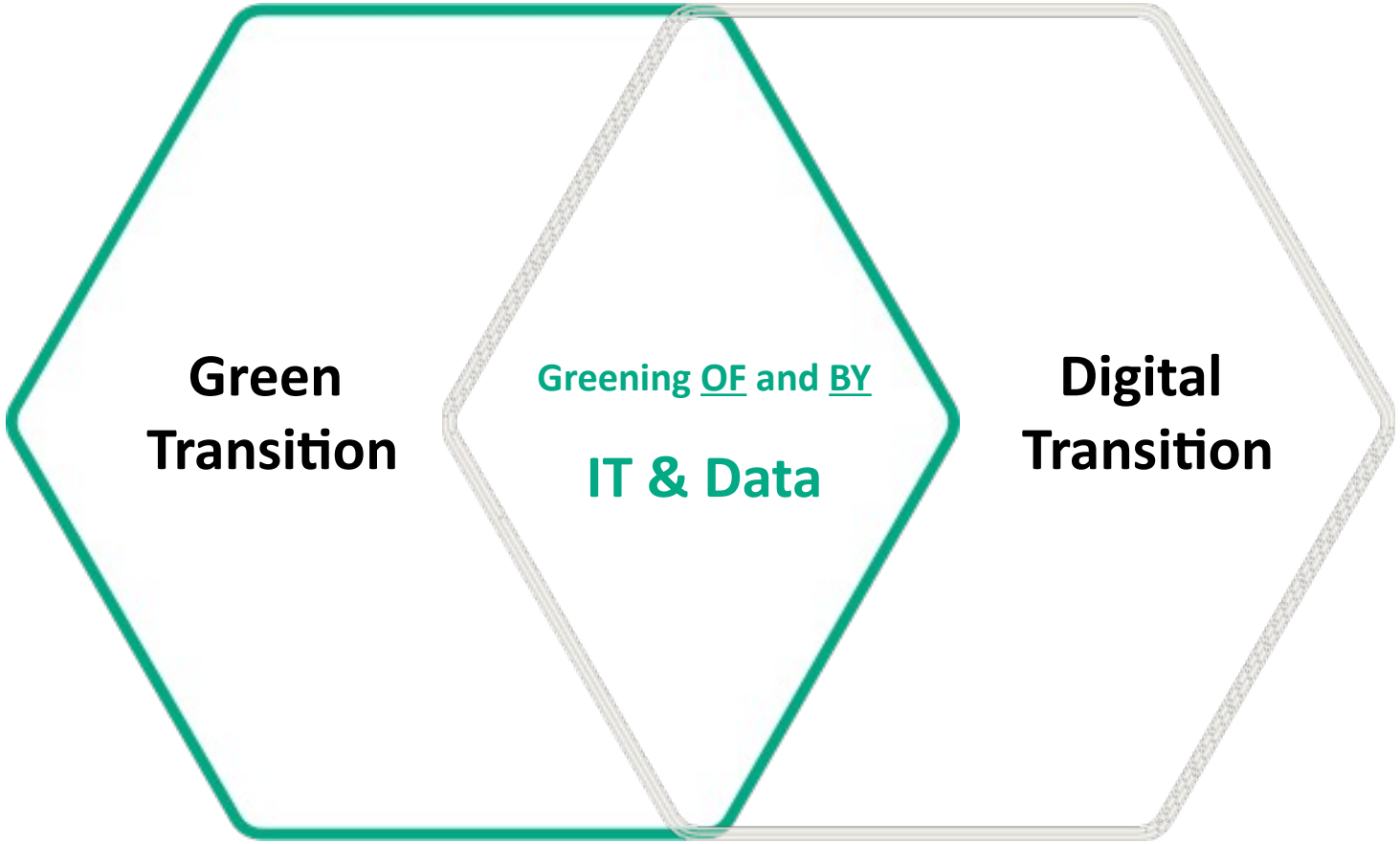
Twin Green and Digital Transition

- Grand Societal Challenges: Addressing climate change, technological change, political shifts, and population changes
- Key global directives for businesses: Sustainable Development Goals, EU Green Deal, NetZero Austria in 2040 and EU in 2050
- Recent crises, e.g., COVID-19 and energy crises have fueled the necessity of the twin transition
- Emphasizing both Digital and Green Transitions is vital for staying competitive (Bioeconomy, Circular Economy, …)
- Past digital trends lacked sustainability; combining both will unlock mutual benefits for businesses

Sources: European Comission 2022; Münch et al. 2022

Synergy of Green and Digital Transitions

- **Twin transition complements and bolsters each other**



Sources: Royal Schiphol Group and PA Consulting

GREEN TECHNOLOGIES IN THE CONTEXT OF THE TWIN TRANSITION

Energy	▪ AI-powered technology to create digital twins to simulate and model real-time energy grid management to forecast and optimise energy consumption.
Mobility	▪ Monitoring and tracking technologies that enhance lifespan of products
Agriculture	▪ AI to monitor, track, and identify, e.g., residues
Building and Construction	▪ Monitoring and tracking technologies for the environmental impact of materials
Energy intensive Industries	▪ IoT tools, like *smart meters* to enhance energy optimisation ▪ Digital Twins that guide in green material selection ▪ Tracking technologies that improve maintenance and recycling

Münch et al. 2022

Empowering Austria's SMEs: Embracing the Twin Transition

- SMEs in Austria: 2 Mio employees, 67% of total workforce, 99,7% of all firms
  - SMEs are important for a resilient, inclusive, and sustainable recovery in the face of these challenges
- **However**: Disproportionate impacts on SMEs highlight their vulnerability to recent economic shocks
- Need for transformation and “forward-looking activities” to secure resilience
- Transformation demands a collective approach: Leveraging **networks** and **clusters** can significantly accelerate SME growth via knowledge sharing and skill enhancement
- Embracing the twin transition enhances global integration and strengthens multinational partnerships for SMEs

Source: European Commission 2020; OECD 2023

How to leverage Cluster Policies for Twin Transition

Integration with Regional and National Assets and Leveraging Existing Infrastructure:

- Connect clusters to local and national resources and complimentary instruments: AWS, FFG, Klima- und Energiefonds
- Utilise the presence of research organisations and educational institutions
- Link to science parks, academic spin-off, incubators, technology licensing offices, innovation centers, etc.

Global Collaboration:

- Develop 'global pipelines' to import new knowledge into clusters
- Address complex challenges through collaboration and transnational networks

Importance of Institutional change:

- Embrace a long-term perspective and risk-taking in the political system
- Policy learning is crucial, leveraging the experience in supporting traditional sectors

Thank you!

www.interregeurope.eu/ACRONYM

Time for questions

Sources

AIT-IS-Report (2015). Stärkefelder im Innovationssystems: Wissenschaftlicher Profilbildung und wirtschaftliche Synergien.

Bundesministerium Arbeit und Wirtschaft (2022). KMU im Fokus

Centre for Regional and Innovation Economics (CRIE) and Technopolis (2015). Cluster als Paradigma der Innovationspolitik - Eine erfolgreiche Anwendung von Theorie in der politischen Praxis? Expertenkommission Forschung und Innovation (EFI). 13-2015

European Comission (2020). An SME Strategy for a sustainable and digital Europe

European Comission (**2022).** Strategic Foresight Report. Twinning the green and digital transitions in the new geopolitical context

Muench, S., Stoermer, E., Jensen, K., Asikainen, T., Salvi, M. and Scapolo, F., (2022). Towards a green and digital future, EUR 31075 EN, Publications Office of th European Union, Luxembourg, 2022, ISBN 978-92-76-52451-9, doi:10.2760/977331, JRC129319.

OECD (2023). OECD SME and Entrepreneurship Outlook 2023. OECD Publishing, Paris,

https://doi.org/10.1787/342b8564-en

Österreichische Raumordnungskonferenz (ÖROK) (2016). Politikrahmen zu Smart Specialisation in Österreich

Porter, M. E. (2000). Location, competition, and economic development: Local clusters in a global economy. Economic development quarterly, 14(1), 15-34.