

CICAT ➤ 2025

Circular Economy Ecosystems: Key features and types

CE ecosystems: key characteristics

In different literature streams, “ecosystems” are increasingly invoked for making system-level impacts and improvements to environmental sustainability and the circular economy (CE). Ecosystem approach is inherently aligned with the CE approach: circularity is pursued to occur in complex socio-technical systems where different actors with their own different roles in the system would support and allow circularity of material flows.

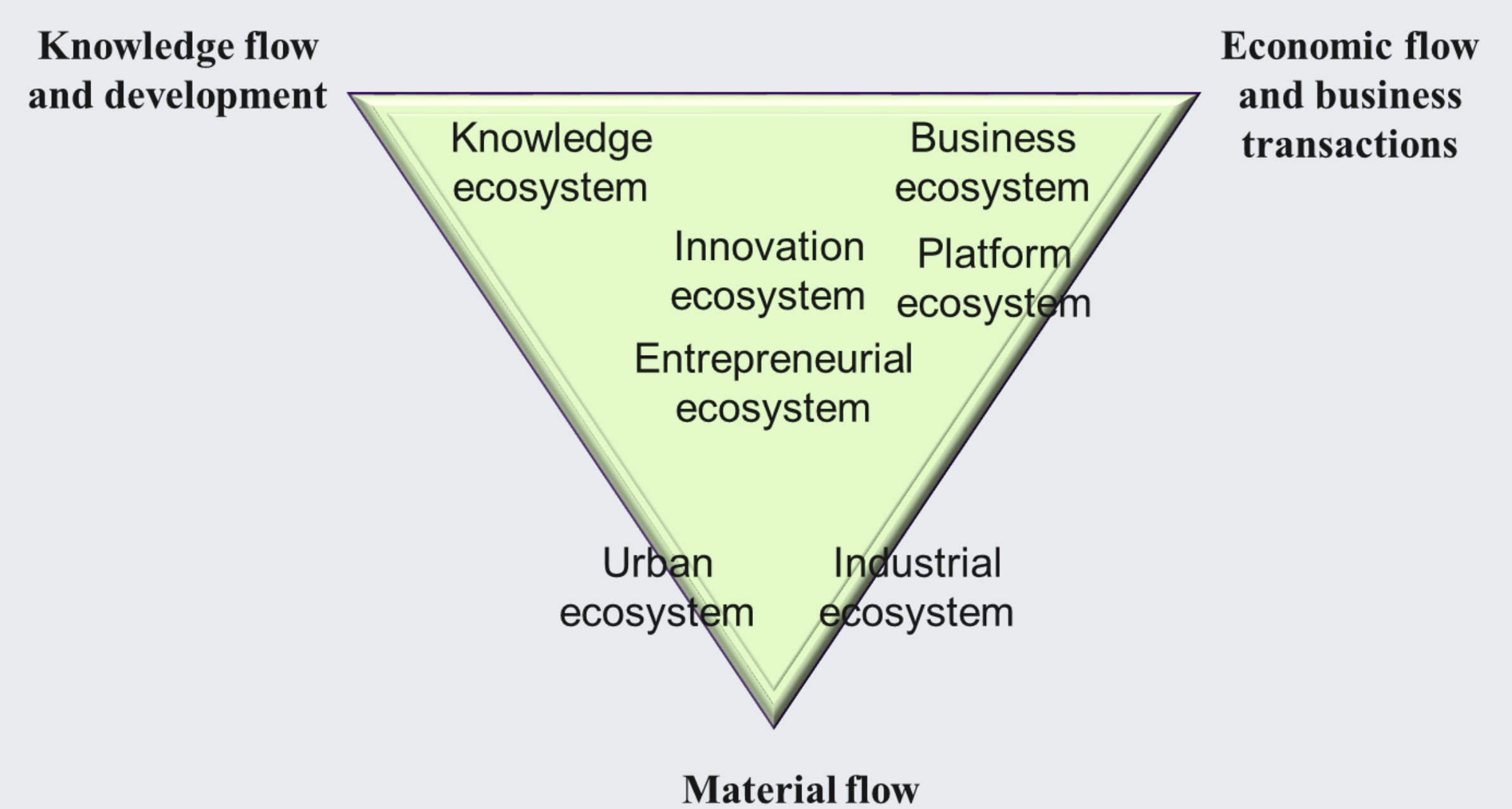
In this research poster, we rely on Aarikka-Stenroos et al. 2021, arguing that a CE ecosystem refers to a multi-actor entity in which complementary, interdependent actors – such as companies, industry actors, government actors and cities and municipalities, universities, non-profit organizations, and citizen-consumer are linked through a common, system-level goal related to resource circularity, circular economy knowledge, or circular economy business. Diverse actors play complementary roles in the system but at the same time, they pursue a shared system-level goal of advancing circularity through recycling, reuse, and reduction/sharing. The ecosystem structure reflects into its management: it can have a clear hub and coordination or be horizontally distributed.

In real-life setting, the concept of CE ecosystem can take many shapes and different types can co-exist and overlap.

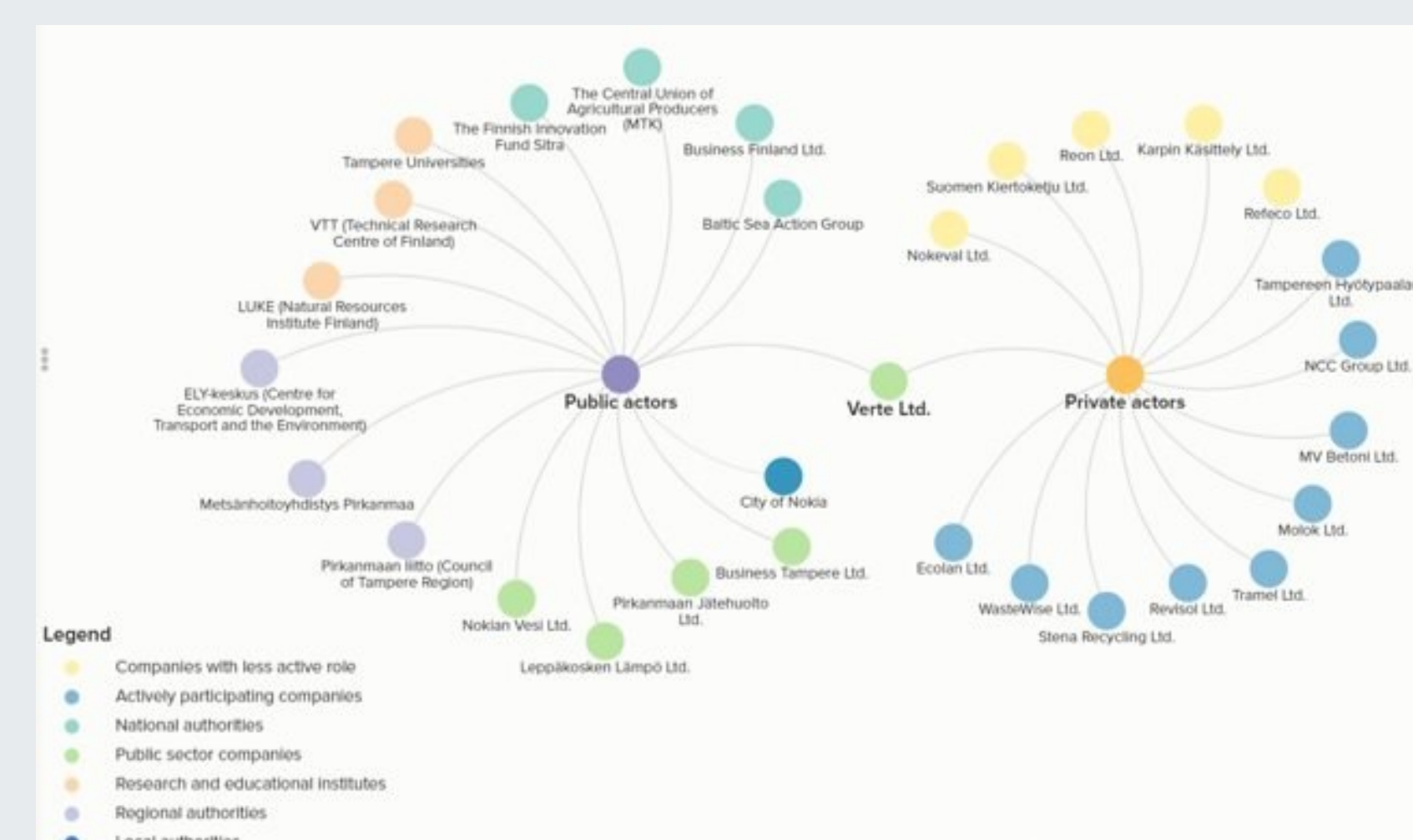
We have examined particularly three different CE ecosystems:

- 1) Regional CE ecosystems such as urban and industrial ecosystems where the power is distributed, and the goal is to solve the regional sustainability challenge
- 2) CE ecosystems of industries, where the power and agency are distributed, and the goal is to develop the industry competences, norms, and value chains
- 3) Company-driven circular business ecosystems, where the company make economic viable business from circularity.

The main CE ecosystem types and flows for circularity



Examples and visualizations on CE ecosystems (Kumu-tool)



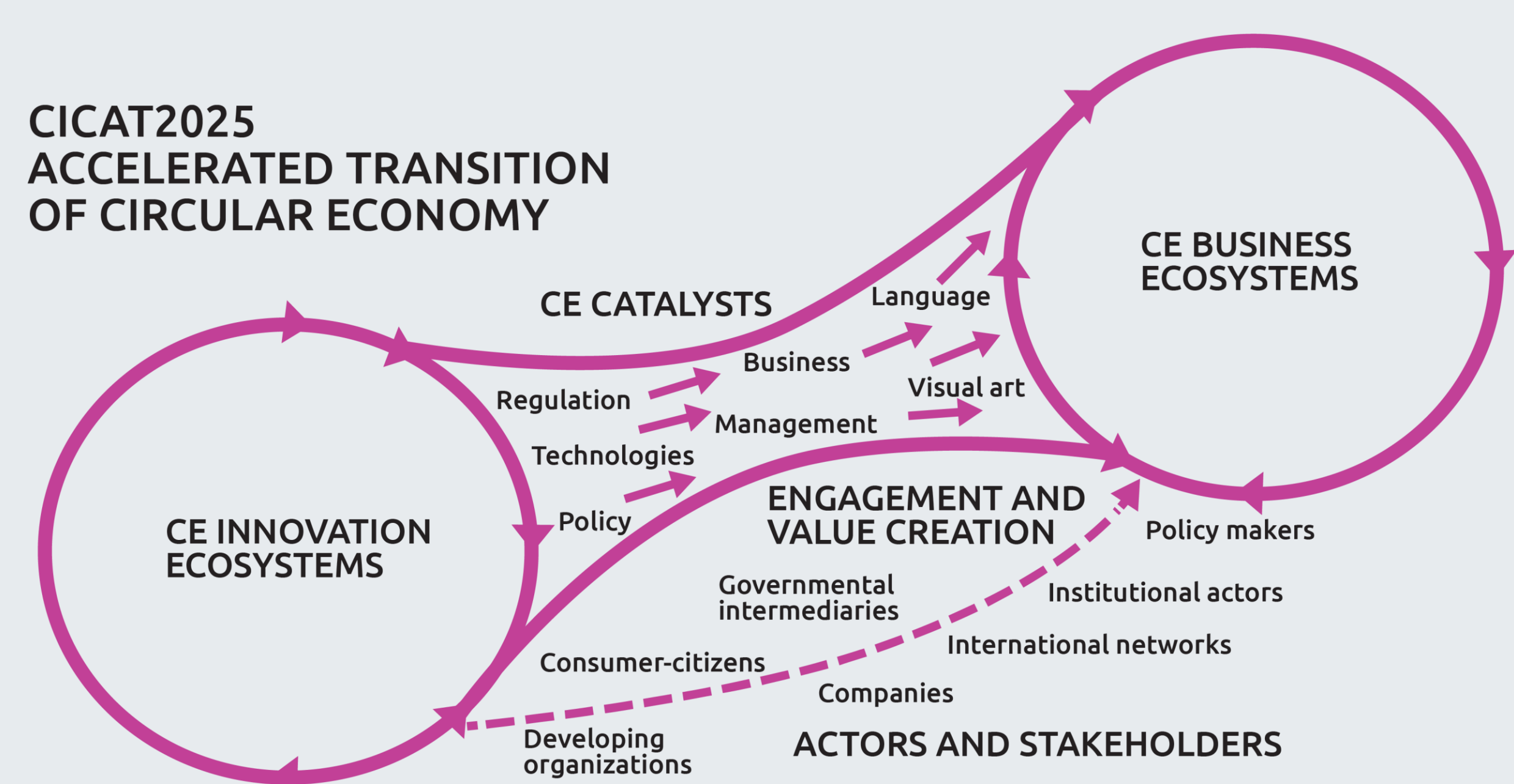
What is CICAT2025?

Circular Economy Catalysts: From Innovation to Business Ecosystems, CICAT2025 is a joint project of Finnish universities aiming to facilitate the transition from linear to circular economy.

CICAT2025 explores a wide range of circular economy catalysts that have the potential to accelerate the adoption of circular economy principles in society and markets. The project supports Finland's strategic objective to become a global leader in circular economy by 2025.

The consortium consists of:
Tampere University, University of Turku, University of Jyväskylä,
University of Eastern Finland, Tampere University of Applied Sciences and
Turku University of Applied Sciences
Grant number: 320194/320206

CICAT2025 ACCELERATED TRANSITION OF CIRCULAR ECONOMY



cicat2025.fi

Aarikka-Stenroos, Leena; Kaipainen, Jenni; Harala, Linnea; Pohls, Eeva; Uusikartano, Jarmo; Väyrynen, Hannele; Alkki, Lauri; Ala-Kerttula, Johanna