Now

10:15–10:30

CIRCULOOS Catalyzing SME Integration in Circular Manufacturing

Vivi Paglaki, R&D project manager, European Dynamics

WHAT IS

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Catalyzing SME Integration in Circular Manufacturing

THE PROBLEM

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Embracing Change in Circular Economy Production Models

The Shift from Process Reconfiguration to data driven, dynamic value chains



CASCADING CHANGE IN PROD. LIFECYCLE

Circular products are designed for multiple lifecycle changes, maximizing value through recycling, refurbishment, remanufacturing, redistribution, and maintenance.

DYNAMIC CONTEXT AND UNCERTAINTY

Questions about product availability, reusable parts, and new procurement challenge

COMPLEXITY IN EMERGING SUPPLY CHAINS

New roles and increased data volumes necessitate critical timing in communication and rapid decision-making.

INNOVATIVE CIRCULAR ECONOMY MODELS

Advocated by the Circular Economy Action Plan, models are to be **customer-centric, customizable, and collaborative**, leveraging digital technologies like IoT, big data, blockchain, and AI.

THE VISION

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CIRCULOOS aims at **empowering** small manufacturing companies in Europe with digital tools and **innovative** business practices.

It focuses on giving **support** for the transition to **circular manufacturing.**



CHALLENGES

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1 Enabling **R-strategies** that transform production processes and supply chains, fostering re-engineering through innovative agreements based on data-sharing and active collaboration among diverse actors.

2 **Skilling** and **re-skilling** of workers to adapt to new technologies.

3 Capture the **market opportunity** of 4.5 Trillion by 2030*, and foster growth by reconsidering product lifecycle.

*https://theprint.in/opinion/a-circular-economy-isnt-just-planet-friendly-its-a-trillion-dollar-market-opportunity/604408

OBJECTIVES

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1 DIGITAL PLATFORM & LCA

- Data Platform & Marketplace RAMP
- 3D digital Twin
- Supply Chain Process Orchestration & Optimization
- Data models

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2 LIFE CYCLE ASSESSMENT

Evaluate how eco-friendly supply chains are.

- Sustainability & Circularity profiles of supply chain process entities
- Sustainable & Circular Supply Chain Assessment Engine

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3 TRUSTED EXCHANGE FRAMEWORK

Secure data environments.

- CyberSecure Framework
- Blockchain network for verifiable operations

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4 VALIDATION AT LARGE SCALE

FUNDING NEW CIRCULAR VALUE CHAINS

With a budget of 3.6M€
for Open Calls

- 3 Pilots
- 15 NEW Value Chains
- Up to (3+6) Value Chain Extensions

5 EUROPEAN HUB FOR CIRCULARITY

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RAMP Robotics and Automation MarketPlace

RAMP Marketplace at www.ramp.eu

Novel co-created business models

Mobilising and Empowering Circular Ecosystem

THE PILOTS

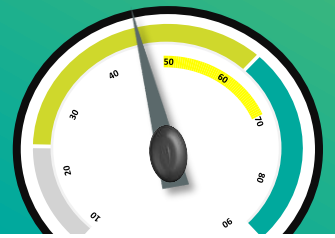


Spain

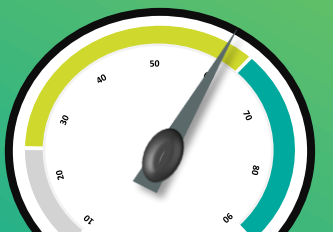
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Industry: Plastic

Goal:
Optimise use of own production resources and create partnerships for sourcing of recycled material.



Re-introduce scrap



Grow network of suppliers

Thermolympic
PLASTIC INJECTION SYSTEMS

CONTENEDORES LOLO

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Hungary

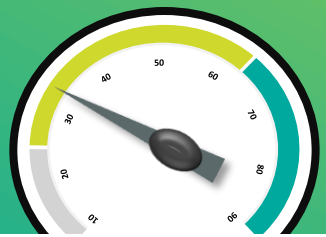
Industry: Leather

GOAL

Reuse or Upcycle leather waste with on time material delivery



Waste upcycling



Sync production schedule



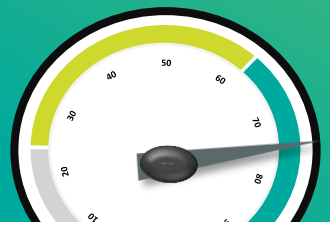
The Netherlands

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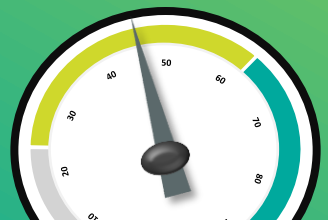
Industry: Wood based artifacts

GOAL

Reuse of wood through re-engineering or wood as a recyclable material.



Max use of recycled wood



Resource planning & wood tracking

CIRCULEREN

HERSO
circulaire houtbewerkers

plennid
maakt het circulair