



Implementing programmes effectively



Factories of the Future PPP (2014-2020)

Made In Europe Partnership (2021-2027)



European Factories of the Future Research Association (EFFRA)

A manufacturing research & innovation community





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FoF PPP | Made in Europe in Horizon Europe



Transforming Manufacturing with Help of EU Framework Programmes



FACTORIES of the Future

Adding value to products for environmentally conscious, quality sensitive customers



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		Description information and communication devices by developing new product design approaches (including enhanced end-of-life performance, re-use and remanufacturing aspects; i.e. implementing "Design for a Circular Organisation Organisation CIRCULAR DEVICES OY Comments level of circularity in these industries in particular. Ø Digital Voice Recorder designed for Circular Economy Recorder designed for Circular Economy Result title Ø Periodic Reporting for period 1 - sustainablySMART (Sustainable Smart Mobile Devices Lifeorycles through Advanced Re-design. Reliability, and Reuse and		ing new product re-use and re- title Digital Voice ble Smart Mobile	 Comments cycle extension including re-use of existing equipment through innovation-based product upgrades and service integration Involving actors and stakeholders in creating new production concepts based on a circular Circular Life Cycle Analysis tool Result title Circular Life Cycle Analysis tool Support for a transition to a circular business model Result description Demonstrated outcomes Design Framework for modular, flexible, adaptable products Circular Life Cycle Assessment tool New business model (products & services) based on circular economy Result comments Co-evolution of products-processes-production systems A Circular Life-Cycle Assessment tool (C-LCA) that 			rrough actors and r nalysis tool ription aptable oducts & of products- -LCA) that	Networks Description DigiPrime has the mission to develop a new concept of Circular Economy digital platform overcoming current information asymmetry among value- chain stakeholders, in order to unlock new circular business Organisation CIRCULAR ECONOMY SOLUTIONS GMBH (C-ECO)			
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Circularity (5°)	•Adoption of CE strategies with adequate countermeasures on products, processes, organization and technologies, i.e. sustainability/circularity KPIs are implemented to follow social, environmental and business impacts. Managerial, Tactical and Operative levels of the entire company are aligned towards this direction. Broad understanding of value flows (such as synergies among forward an reverse logistics, local value chains, zero-waste manufacturing) and co-creation of new value circles within manufacturing networks (like flexible remanufacturing networks, upgrading of products) is one of the key managerial practices.							
Circular Economy Thinking (4°)	•The top management has pushed the experimentation of pilot adoption of some CE strategies (e.g. new product design and deployment of new services), though preliminary internal analysis about how to move from company current status to CE considering product, processes, organization and technologies investments areas. This initial transition is led by managerial and tactical levels.							
Systemic Material Management (3°)	•The "R-cycles" of industrial materials has become a standard practice adopted by the company and external partnerships have been established in order to systematically identify possibilities to reuse, refurbish and remanufacture materials and promoting the use of digital technologies for tracking, tracing and mapping of resources. Moreover, any type of resources is internally studied in order to think about its possible reintroduction in a new cycle. At this level, not only the managerial and tactical level is involved but also the more operative one.							
Industrial CE Piloting (2°)	•The top management has pushed the experimentation of pilot adoption of some strategies aiming at reuse the industrial waste either internally or by exchanging it with external industrial actors. Some cultural modifications have been put in place within company boundaries fostered by managerial and tactical levels of the company							
Linearity (1°)	•The manufacturing company does not consider any projects to become circular, it is stuck into the traditional linear concept of make-take-dispose.							
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Three circles enabling circularity



- Circular Manufacturing strategies are the concrete implementation of circular economy principles in manufacturing plants.
- The adoption of these strategies implies the overall transformation of the company, starting from organisational factors, processes, products and technologies.
- Digital Technologies are enabling transparency of two other cycles.

Valkokari, P (2019) https://www.vtt.fi/sites/datatowisdom/PublishingImages/publications/FINAL%2 0Advancing%20circular%20business.pdf

More information: D2W (From Data to Wisdom – Approaches enabling circular economy) https://www.vtt.fi/sites/datatowisdom





Made In Europe Roadmap Priorities



Excellent, Responsive, & Smart Factories



Made In Europe Roadmap Priorities



New integrated business, product-service and production approaches; new use models

Made In Europe Roadmap Priorities



Human-centered and human-driven manufacturing innovation

MiE policy objectives

Manufacturing competitiveness

Leadership & manufacturing excellence, generating new products and new markets

European Green Deal

Circular and climateneutral manufacturing

An Economy that Works for People and SMEs

Attractive value added manufacturing jobs

A Europe Fit for the Digital Age

Digital transformation of manufacturing industry, trusted and robust Policy driven R&I and impact Key enablers and technology drivers

Specific Objective 'Circular products & climate-neutral manufacturing'

Associated R&I Objectives:

- 1. Ultra-efficient, low energy and carbonneutral manufacturing
- 2. De-manufacturing, re-manufacturing and recycling technologies for circular economy
- 3. Manufacturing with new and substitute materials
- 4. Virtual end-to-end life-cycle engineering and manufacturing from product to production lines, factories, and networks
- Digital platforms and data management for circular product and production-systems lifecycles

MiE Key Technologies and Enablers

- Advanced and smart material processing technologies and process chains, including recycling and remanufacturing
- Smart mechatronics, robotics and logistic technologies
- Data analytics and (cognitive) artificial intelligence ; Simulation and modelling, digital twins
- Digital platforms and data sharing solutions, robust and secure industrial communication technologies
- New business models, manufacturing organisation approaches and humancentred science and innovation approaches
- Standards





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