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alicia – assembly lines in circulation

ALICIA

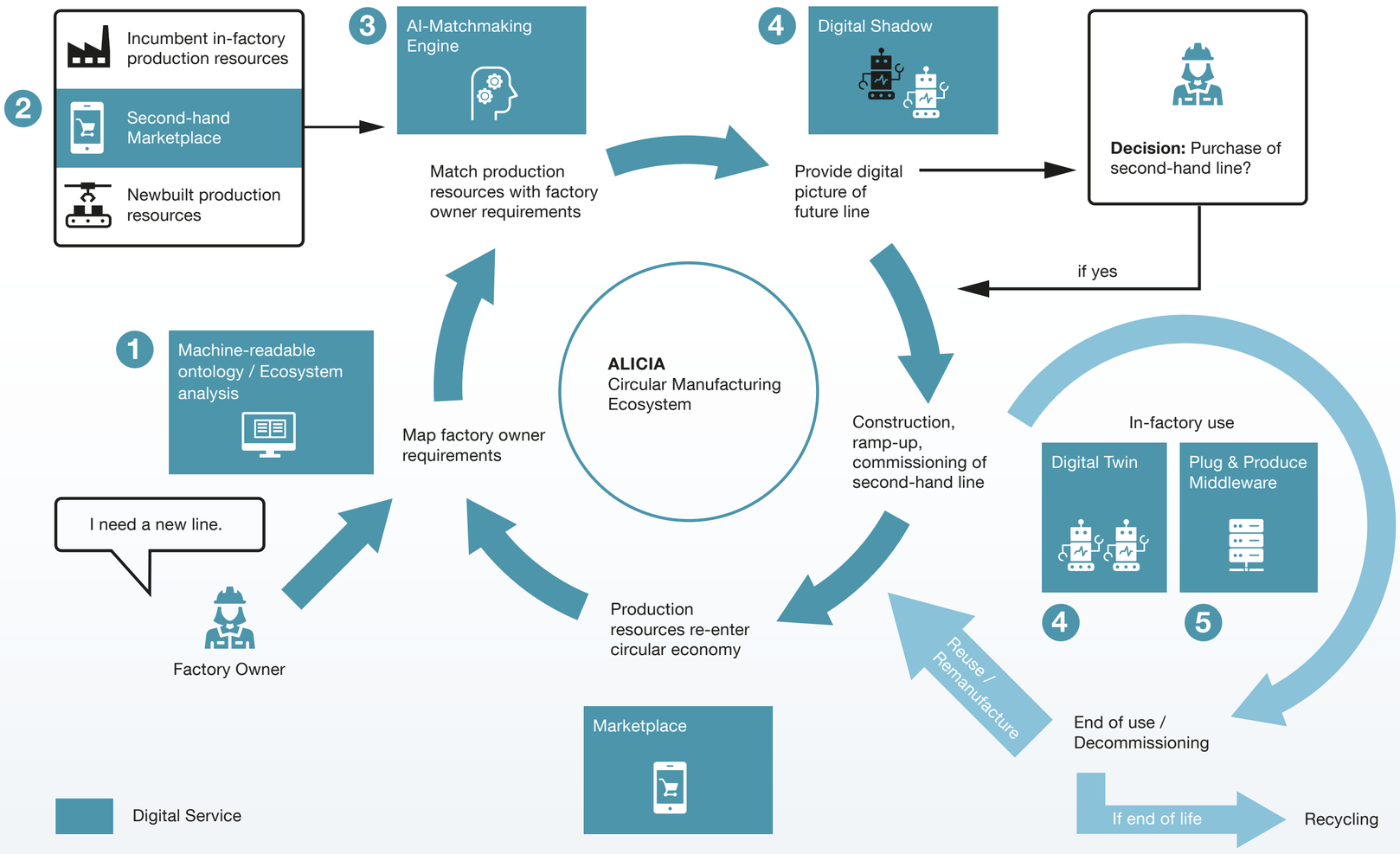
Assembly Lines in Circulation

Background

Premature decommissioning of production resources leads to resource wastage. Reusing these resources is vital for fostering a circular economy. However, challenges hinder equipment reuse, such as compatibility issues between generations and manufacturers. Additionally, estimating the remaining lifespan of used equipment and the absence of a Europe-wide marketplace pose significant barriers.

The Circular Manufacturing Ecosystem (CME)

1. Ontology to capture factory owner requirements
2. Online marketplace for used and newbuilt production resources
3. AI-matchmaking engine for matching production resources
4. Digital shadow and digital twin for line planning
5. Plug-and-produce middleware for second-hand equipment integration



Objectives and Methodology

- Develop a standardized framework for capturing factory requirements to facilitate seamless data exchange among stakeholders in the production value chain.
- Create integrated digital tools for planning, constructing, and operating sustainable second-hand production lines.
- Integrate all ALICIA digital tools into a small-scale system and test it in a controlled environment.
- Conduct real-life demonstrations of the ALICIA system in two industrial environments.
- Analyze framework conditions and prepare for commercial adoption post-project.

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