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REMANufactuRing – Key enABLER to future business (REMARKABLE)

CARLSON, ANNELIE (LiU) | DIENER, DEREK (RISE) | JOHANSEN, KERSTIN (JU) | KURILOVA-PALISAITIENE, JELENA (LiU) | NILSSON-LINDÉN, HANNA (RISE) | VOGT DUBERG, JOHAN (LiU) | WLAZLAK, PARASKEVA (JU) | SUNDIN, ERIK (LiU)

Circularity through remanufacturing

Remanufacturing can be described as a process of bringing used products to “like-new” functional state. It is an industrial process whereby products referred as cores are restored to useful life. During this process the core pass through a number of remanufacturing steps, e.g., inspection, disassembly, part replacement/refurbishment, cleaning, reassembly, and testing to ensure it meets the desired product standards’.

Remanufacturing involves not only new processes but also necessitates changes in product design, the adoption of new business models, advancements in information management, and the inclusion of sustainability assessments. These assessments ensure that the new designs and circular business models implemented are not only circular but also sustainable. All these aspects form a crucial part of the REMARKABLE project, contributing to the development of a comprehensive remanufacturing ecosystem.

The purpose of the REMARKABLE project is to support manufacturers to become more resilient, circular, and sustainable through remanufacturing and contribute to a more efficient use of resources.



Read more about
REMARKABLE project
here

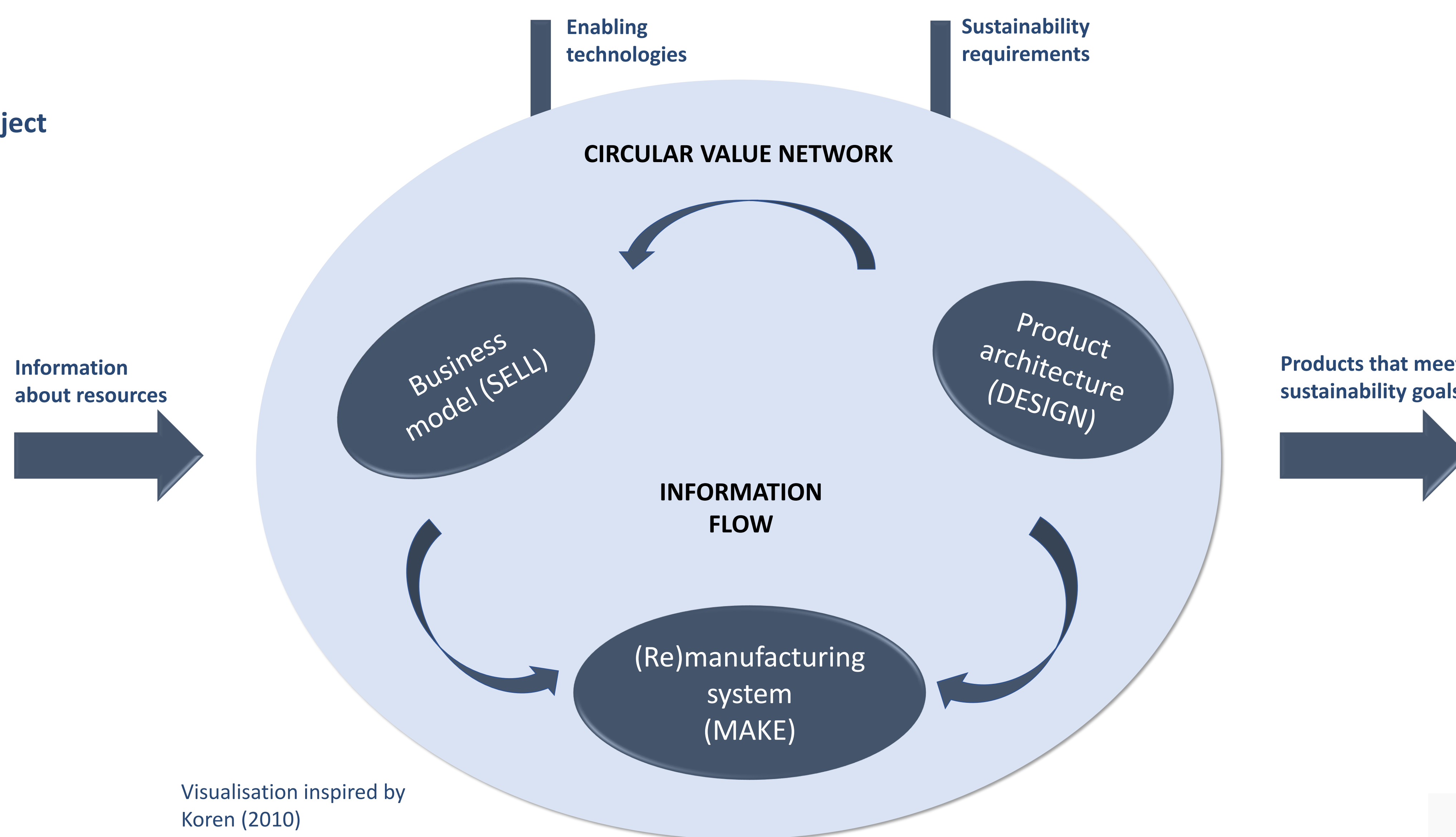
Project activities and initial results

The REMARKABLE project involves six highly engaged manufacturing companies from a variety of sectors that will collaborate during 2022-2025. At first, workshops have taken place with each company to identify needs, challenges and ambitions. In addition, five student projects have been conducted during spring 2022 along with two study visits at participating companies.

Initial company discussions shows that remanufacturing tends to question current business models and generate grounds for circular business models development (e.g. leasing, rental, deposit system). Remanufacturing often also questions the current value network and the actors in it, as remanufacturing flows can generate need of new business relationships whilst maintaining current business models.

Remanufacturing poses challenges due to small batch sizes, low automation, and reliance on manual labor. Flexibility and specific capabilities are needed to handle uncertainties, complexity in planning, and ensure efficiency. Tools, methods, and frameworks are necessary to effectively balance all three pillars of sustainability. The development process of remanufacturing systems plays a critical role in achieving sustainability performance which also requires effective information management.

Commonly, the products are not adapted for remanufacturing. Within the REMARKABLE project we are investigating how to make the products easier to remanufacture by design. This includes for example aspects of making the product easier to clean and disassemble.



Dr. Hanna Nilsson-Lindén
- Senior researcher and Focus Area Manager Traceable and Quality-Assured Circular Materials at RISE
- WP-leader and poster presenter of REMARKABLE

The REMARKABLE project’s six goals

- #1: Improved business models for at least three participating companies when it comes to economic and environmental performance
- #2: Greater knowledge about which information is needed for each step within the value network to gain more overall efficiency and resilience
- #3: Demonstrated ways to collect and present information that is needed to support the transition towards an advanced remanufacturing process that utilize emerging technologies
- #4: Process yield increase at existing remanufacturing processes of 20%
- #5: Products better designed for remanufacturing with an effect of 15% less environmental impact
- #6: Designed an educational module for life-long-learning that facilitates manufacturing companies to position themselves in the future circular economy related to the predicted increased volume of remanufactured components and material in the supply chain

**RE:
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