

Potentials and Challenges of Circular Economy as Sustainability Strategy

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SINTEF is one of Europe's largest independent research organizations. SINTEF is a multidisciplinary research organization in the fields of technology, the natural sciences, medicine and social sciences, and we conduct contract R&D as a partner for the private and the public sector. Our vision is "Technology for a better society". SINTEF was established in 1950, as a spin-off from The Norwegian University of Science and Technology (NTNU).

We are working at the Department of Technology Management, in the research group Innovation & management. Assiya's background is in international relations, European and international law and economic geography. Elis background is in political science, innovation management and environmental management.

In 2016 SINTEF established a strategic priority area on circular economy. SINTEF aim to take a holistic approach through combining technological and social sciences expertise, in order to provide our customers with multidisciplinary solutions. Important topics are optimization models combining technological possibilities with economic and environmental effects, development of new sustainable business models and new forms of collaboration as well as developing the materials and technologies of tomorrow.

The strategic priority area on circular economy area has led to new projects opportunities for us and for our customers. From our point of view, we have identified some main challenges and opportunities in our circular economy projects:

- Businesses: Working strategically with opportunities and barriers internally and externally (short term-long-term-perspectives).
- Public sector: Public procurement as a tool for a county municipality to promote circular economy
- Link between sustainability transitions, innovation management and circular business models

In the current stage of our activities devoted to the circular economy priority area, we aim for two main outcomes by the end of 2019:

Deliverable 1. A literature review on implementation of circular economy from the systemic+business perspectives

Deliverable 2. Circular economy and sustainable business development

We are currently conducting research on new circular economy business opportunities for an office furniture manufacturer. The transition to a circular economy involves changes in business, throughout the supply chain and related stakeholders. The research question guiding our work is: how can new circular economy business opportunities be explored, through working strategically with barriers and opportunities internally and externally? This research is part of a user-driven research-based innovation programme, which is high quality R&D projects with a high degree of business and socio-economic potential.

We are researchers in the fields of policy, innovation management, corporate sustainability/sustainable business development. By working closely together on this task, we are aiming to combine this broad perspective in order to analyse research questions as:

- What are the opportunities and threats for a specific company linked to a new business model as e.g. product-service? Short-term and long-term perspectives? What needs to be changed in order to succeed with a new model? Technologies, skills and capabilities, policies?
- What are important stakeholders? How to work strategically with new circular economy initiatives with e.g. suppliers and customers? Other networks?
- How to manage and integrate circular economy across different departments of the organizations? E.g. design, development, production.

The methods used for this task is the PESTLE and SWOT framework. We also explore paradoxes in implementation of circular strategies.