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A design tool for co-creation in operations and supply chain management: Sustainable Circular Transformation framework

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Abstract

Purpose

This paper proposes a framework that addresses the urgent need for regenerative co-design approaches to tackle climate change by focusing on a systems transition (Meadows, 2008) driven by changes in the human-nature relationship (Akama *et al.*, 2020), which are vital for combating climate change and promoting futures of sustainability (Ceschin *et al.*, 2016). The circular economy (CE) concept is one approach to addressing this issue (Velenturf *et al.*, 2021), although it has been primarily utilized as a technocratic tool thus far (Stijn *et al.* 2020). Its broader social and economic aspects, which are critical for regenerative transition towards sustainability, remain insufficiently explored (Evans, 2025a).

By applying the Sustainable Circular Transformation Theory (SCT) (Evans, 2023), this paper proposes a framework (Dorst, 2015) to engage operations and supply chain (O&SC) management academics in fostering collaborative pathways spurred by CE principles for inclusive socio-economic impact and change, as well as reshaping emerging research priorities. Participants collaborate on co-designing interconnected systems involving social, economic, ecological, and political factors (United-Nations, 2023) exploring the implications of a more-than-human life. The research question: *How can the SCT framework contribute to designing O&SCs for alternative, just, and equitable futures of sustainability?* guides a collective exploration of the opportunities and challenges presented by the SCT framework and its relevance and usefulness for the business academic community.

Methodology

The methodology is action research in the form of co-designing techniques, speculative prototyping, and participatory engagement to foster dialogue and critical reflection. Previous tools such as the ones developed by Durugbo (2014), Brown *et al.* (2021) and

Coffay and Bocken (2023) are relevant to this research. Anticipated outcomes of the proposed framework include a shared understanding of SCT's relevance and usefulness, the identification of collaborative decision-making strategies, and the development of an O&SC management academics network to support future research efforts.

The proposed framework aims to inspire the O&SC management community to pursue radical multidisciplinary/transdisciplinary collaborations that facilitate equitable, just and impactful transitions towards a CE (Smith *et al.*, 2025). The research design consists of co-creation workshops (among O&SC management community), where participants form small groups which are engaged in the coproduction process, inviting different perspectives and inspiration for dialogue, critical reflection and shared understandings. The techniques of codesign aim for democratic participation, engagement and trust in the process (Evans *et al.*, 2025b). Participant examples are situated in their own worlds, where everyone has a voice and participants codesign for socio-ecological cohesion with new technologies for regenerative transformational futures of sustainability (Evans *et al.*, 2025c).

The foundational theories to guide the framework emerge from the SCT, as composed of twelve interwoven design considerations, clustered into four categories: 1) meta: Systems level change over the long term, visions and values for sustainable circular society, Nuanced policy, adaptive mindsets; 2) Social: Education-learning new skills and acquisition of knowledge, access to information, progressive technology development and sustainable consumption (mindset); 3) Economic: new and diverse economies, equity and equality, sustainable production (mindset); 4) Natural environment: sustainable production (industrial model). The concept of circular economy (CE) represents the change in sustainable production and can be conceptually represented by three key R strategies, reduce, reuse and recycle, which can be expanded to include the 10 Rs altering the interconnected social-business-nature relationship and disrupting an entire place-based system.

Findings

The proposed framework opens the dialogue and fosters collaborative reflection and co-design among the operations and supply chain management community for system-shift frameworks driven by a change in sustainable production, and in this example driven by the CE. The proposed framework takes a multidisciplinary/transdisciplinary approach:

- Highlights opportunities to explore an evolutionary systems framework through co-design for social cohesion in a more-than-human world.
- To inspire O&SC researchers to reframe their research and practices for regeneration and the futures of sustainability.
- It seeks to stimulate the O&SC academic community to consider collaborative decision-making in the context of changes in socio-economic and ecological models, as well as policy frameworks.
- Additionally, it aims to grow a network of O&SC researchers for future collaborative studies.

The findings are currently ongoing with two in-person co-creation workshops planned for 2026. These workshops will involve O&SC researchers, structured as follows: a brief introduction of key concepts by the facilitators, followed by work in small groups, each group will investigate the SCT framework, the groups will discuss the meaning, methods, and clarifications as well as perceived barriers, the groups will report back to the whole cohort, and final reflections and take away points both from the value-added by the framework, its iteration and its use.

Contributions

This research will expand the literature on co-design-based solutions for facilitating the transition towards sustainability in a CE. A new framework is proposed by bringing in O&SC management theory and practice together. Furthermore, the O&SC academic community will benefit from this participatory approach by enabling collaborations for future research projects on sustainability for CE.

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