

Collaborative Business Models for the Circular Economy: Multi-stakeholder Alignment by a Large Plastics Incumbent

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Introduction

Plastics are an integral material to the European economy, but they remain embedded in a linear economy that produces waste and environmental harm by design. To address this, one proposal is to bring plastics into the Circular Economy (CE), 'a regenerative system in which resource input and waste, emission, and energy leakage are minimised by slowing, closing, and narrowing material and energy loops' (Geissdoerfer et al., 2017, p. 759). Within this system, plastic waste is seen as a valuable resource to be kept within the 'loop' for as long as possible without leaking into the environment.

To enact the circular transition, businesses must move away from linear thinking and incorporate circular principles into their business models, creating so-called circular business models. However, this remains a challenge for many firms due to the interconnectedness inherent in a circular economy: 'going circular' automatically entails not just changing their own business model, but also those of the many firms that are part of their network. In these networks, it is still unclear how to align multiple actors' interests, engage in multi-stakeholder value creation and value capture, and jointly develop a collaborative business model to exploit the opportunities triggered by the circular plastics economy.

Research Aim & Objectives

This study aims to shed light on how large incumbents in the plastics industry transform their business models and create collaborative business models to capitalise on the circular economy. Few incumbents have succeeded in implementing a CE paradigm yet they have great potential to advance the CE transition, even with minor changes (Parida et al., 2019). Questions addressed include:

- How can incumbents align multiple actors' interests to exploit the opportunities triggered by the circular plastics economy?
- What business model innovations are needed by multiple actors in the circular plastics ecosystem to jointly create and capture value ?
- What barriers/drivers do these actors face in shifting to a collaborative circular business model?

Literature & Gaps

A business model connects value creation with value capture, which may or may not be located within the boundaries of one organisation (Osterwalder & Pigneur, 2010;

Zott et al., 2011). As a result, companies often need to define ways to create, deliver, and capture value in conjunction with external partners in so-called open business models (Hienerth et al., 2011; Vanhaverbeke, 2006).

Within the open innovation literature, it is unclear how and when firms should participate in joint efforts for synergistic value creation and capture between multiple stakeholders in a network or ecosystem. In multi-stakeholder scenarios, collective business models can no longer be developed by any single actor, moving the business model beyond the organisational level to the network or ecosystem level (e.g. Vanhaverbeke & Cloudt, 2006; van der Borgh et al., 2012). A similar scenario is expected with the circular economy: because 'circularity' is a property of a system rather than an individual product or service (Adams et al., 2016; Ceschin & Gaziulusoy, 2016), integrating circularity into businesses actually requires not just one but multiple actors to change what they do (Konietzko et al., 2020).

In this paper, we focus on business model transformation for the circular economy (CE) at a large incumbent and its network, envisioned in terms of integrating open innovation strategies into its business model (e.g. Saebi & Foss, 2015). Integrating both open and closed innovation with circular business modelling requires different approaches (Bocken & Ritala, 2021), but this needs to be further developed empirically. We aim to shed light on how actors in a network could create a collective business model such that multiple actors' interests are aligned to exploit the opportunities presented by the circular economy (a gap identified by Parida & Wincent, 2019).

Moreover, we aim to contribute to circular business model research, which has recently emphasised the role of networks, stakeholder engagement, and ecosystem co-creation/orchestration (Antikainen & Valkokari, 2016; Konietzko et al., 2020; Parida et al., 2019; Parida & Wincent, 2019; Mishra et al., 2019; Zucchella & Previtali, 2019 in Santa-Maria et al., 2021). As with the wider open innovation literature, it is still unclear how actors in a network within the circular economy should engage in value co-creation and value capture with other CE actors (Ferasso et al., 2020).

Methodology

We employ a single embedded case study of the packaging plastics ecosystem of our project partner, Dow. As a large plastics incumbent actively pursuing circularity in their sustainability goals, they can be seen as a typical case (Yin, 2003) representative of the direction being taken by the plastics industry as a whole

The study begins with a systematic literature review (Tranfield et al., 2003; Easterby-Smith et al., 2008) of design principles for collaborative business models. This is followed by semi-structured interviews and focus group discussions with executives and managers of Dow and its ecosystem partners. Data is subjected to provisional coding (Saldaña, 2009) and reduction (Corbin and Strauss, 2015), and triangulated against archival data.

With these, we map the collaborative business model by understanding the role, resources and capabilities, commitment to circular transformation, value contributed, and value captured by each actor. We identify their needs, expectations of each other, tendencies for collaboration, and possible barriers/drivers that they might face within the ecosystem now and in the future. Ultimately, we will distil these into recommendations on how to orchestrate the ecosystem in such a way that actors are able to innovate their individual business models while jointly collaborating, creating, and capturing value.

The core of data collection is scheduled in early 2022 during my 4-month secondment at Dow. I will formally be part of the company and I plan to conduct interviews and focus group discussions during this period. As such, empirical findings will not yet be available in July 2021 (at the time of the doctoral colloquium). However, a number of meetings and discussions have been conducted between myself and Dow, which has allowed me to understand the problem from their perspective. This practitioner point-of-view is something I can bring to the table during the discussions at the doctoral colloquium. Moreover, as part of my work with the company in the next few months, I will be mapping the plastics value chain to understand the complexity of the system from an outside-in perspective.

Expected Contributions

Ultimately, this study will deepen our theoretical understanding of the creation of collaborative business models in the multi-stakeholder scenario of the circular economy, unraveling how actors in a network within the CE can optimally engage in joint value creation and value capture. Further, as circular business model literature remains largely theoretical (Santa-Maria et al., 2021), we provide important empirical insights and validation through our case study of an incumbent in the plastics sector - a key contributor to the European economy in terms of jobs and revenues generated.

We also aim to develop practitioner-oriented insights on how to shift to a collaborative business model and orchestrate it to successfully align multiple actors' interests. Moreover, by identifying barriers and drivers that actors face in shifting to a CE-oriented collaborative business model, we will also be able to devise policy recommendations that could help in driving the transition to a circular economy.

From a societal relevance perspective, this research addresses the growing need for society to look toward more sustainable patterns of production and consumption. If business actors are empowered to transition to more circular business models, then it is a step closer for society as a whole to transition to a more sustainable future.

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