



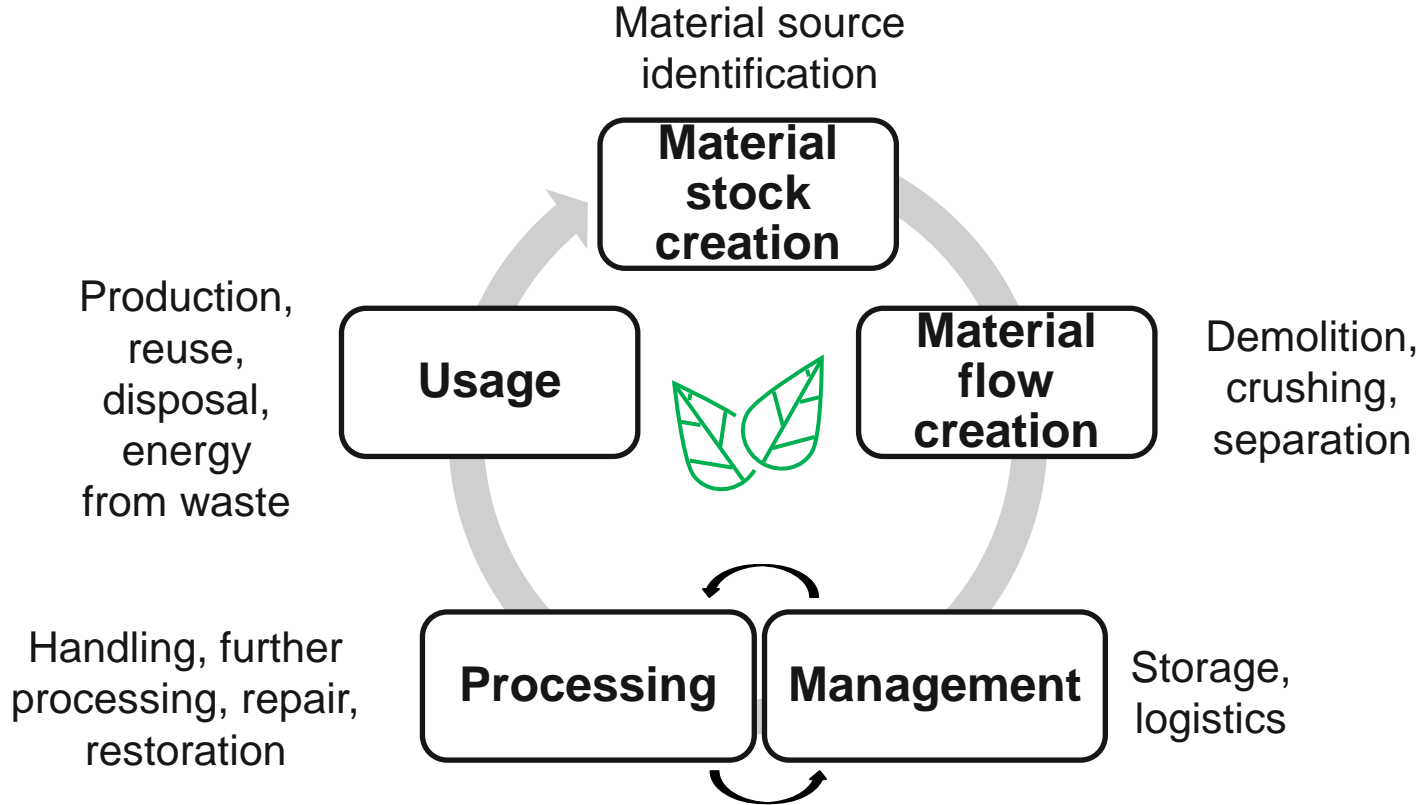
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Initiating and designing an emerging multi-platform ecosystem for the circular economy in the built environment: An empirical case study

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Circular Economy (CE) Processes



Platform Ecosystems Supporting CE

- Evolving **organisations** that coordinate actors innovating and competing;
- **Create value** by developing economies of scope in supply and/or demand;
- **Build on a technological architecture**, which is modular and includes a core and a periphery

- Three platform types

- Evolution ↓
1. **Transaction** platforms facilitating exchanges and transactions (Uber, Airbnb)
 2. **Innovation** platforms enabling the creation and innovation in complementary products and services by the users and complementors (Nintendo, Google Android)
 3. **Hybrid** platforms combining features from the transaction and innovation platforms (Amazon, Facebook)

Designing a Platform Ecosystem is Not Easy

- Crucial for the platform's survival is that leaders
 - design appropriate incentive structures, control mechanisms and regulations
 - generate network effects, govern ecosystem, balance pricing mechanisms, compete for dominance, resolve tensions
- Previous studies emphasise singular firms' role in leading the platform ecosystem.



We lack insights on the early development phases of a platform ecosystem where several platform leaders are involved.

Research questions

1. **How do several platform owners** from distinct industries **initiate and design an emerging platform ecosystem** for the circular economy in the built environment?
2. **What are the challenges** that they experience?

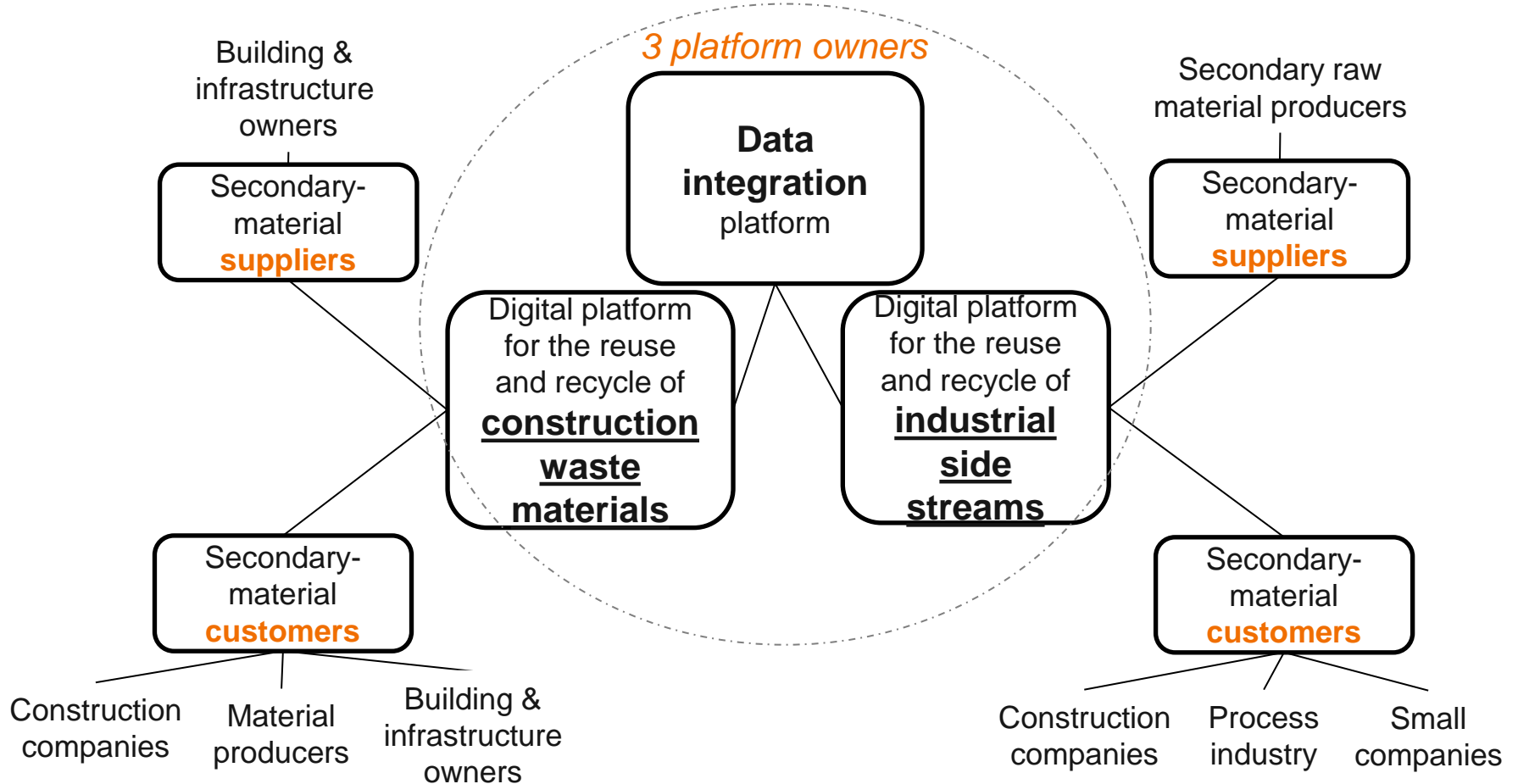


The roles of companies trying to merge three complementary platforms

Methods

- Case study
- 10 in-depth interviews and archival sources
- Interview questions focused on
 - Platform ecosystem **emergence**
 - Platform **design**
 - **Challenges** of designing a multi-platform ecosystem for the circular economy, and ways to overcome them
- Iterative data analysis to draw a storyline

Case study





Findings and contribution

1. **Initiating**
 2. **Designing**
 3. **Challenges**
- } the emerging multi-platform ecosystem
- in designing a platform ecosystem for the circular economy.

Initiating a multi-platform ecosystem







- A common critical challenge: mismatch between supply and demand
 - Customers did not know the availability of side streams or waste material, their location and reuse potential or price.
- A joint articulation of the ecosystem's purpose and value creation potential for the stakeholders
 - Match the potential suppliers with buyers
 - Enable data-driven business models with service-oriented logic by complementors
 - Offer integrated solutions for the circular economy in the built environment



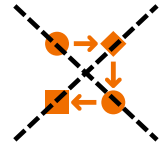


Designing a multi-platform ecosystem

- Integration of the platforms require expertise and multidisciplinary
 - Financial experts to advise on the monetisation models for creating and capturing value from transactions. 
 - Legal experts to negotiate IPR 
 - Technical experts to develop processes for automation and integrate existing systems. 
 - Circular economy experts to specify use cases for new business opportunities. 

Challenges in designing a platform ecosystem for the circular economy

1. Lack of availability and access to reliable, structured and harmonised data about building materials and industrial side streams, manual laborious reporting
2. Lack of procedures for certifications and classification of what is interpreted as a product and a waste implicates the liabilities of suppliers and demand
3. The fluctuating availability and inconsistent quality of material and side streams complicate matching the supply with demand



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