

## 2. PROCESS

Effectuation builds upon means and stakeholder commitments to work towards potential futures that will evolve over time. Contrasting with causal logic in which the goal is predetermined and means are gathered to reach this set goal, the effectual approach enables new products or firms to be build while minimizing risk and investments.

Applying this logic, interviews with stakeholders and potential customers, and case studies of the existing pilot and another existing return logistics system, were used to create insights in the means and current goals, which were translated in potential value propositions to reach in the future.

A design intervention was used to rapidly prototype the next iteration toward these potential value propositions and show the client how the effectual approach can be implemented. This design phase focused on the various stakeholder contexts and used a compact waste container and an MVP version of the waste collection bin to pilot the envisioned product-service system. Using phenomenological research, the designs were evaluated, resulting in a rich set of insights about the requirements and wishes for the system, container, bin and involved partners.



## 3. RESULTS

Building upon the insights from the design phase and the research into the envisioned return logistics product-service system, the final result of the project is a set of four future visions that detail potential business models that the client could transition to.

# Smart waste stream collection in an inner-city environment

An effectual approach to answer the research question:

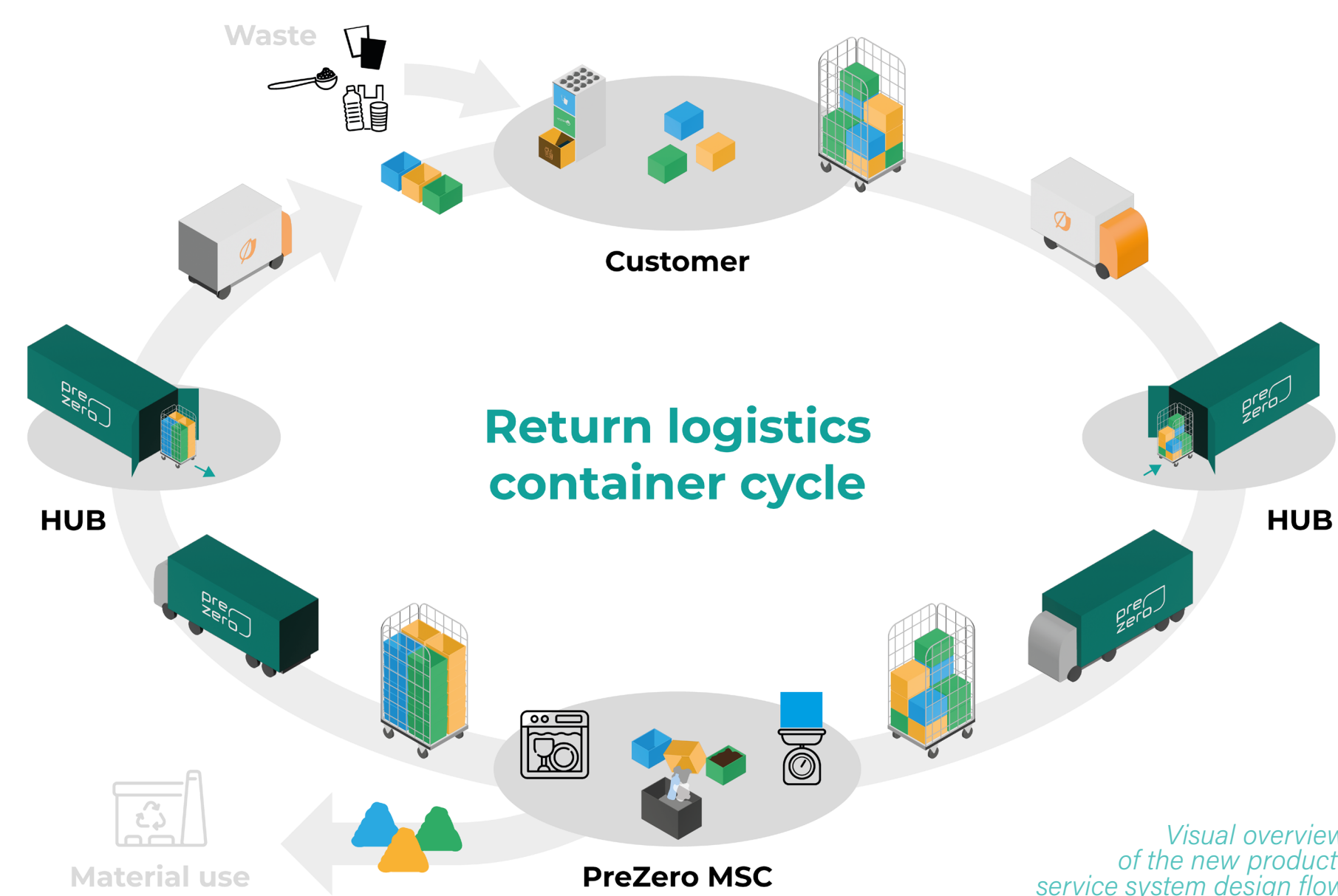
*How can a scalable product-service system for smart return logistics of source-separated commercial waste streams in an inner-city environment be designed and implemented by the client?*

## 1. CONTEXT

Challenged to innovate towards full circularity and sustainability, both the waste management and inner-city transport industry are drastically changing in the Netherlands. Being a waste management organization that operates in these markets, PreZero is looking for new waste collection solutions to facilitate the transition towards circularity.

An envisioned solution for this new context could be in collaboration with parcel delivers that operate via hubs on the outskirts of cities. By letting them collect waste streams from inner-city customers while also delivering parcels, the electric vehicles that would otherwise return to the hub empty would be cleverly used.

With a first basic pilot of this system running, the client was looking for a for a custom solution to fit the needs and wishes of all involved stakeholders.



J.J. (Joppe) de Waart  
'Smart waste collection in an inner-city environment'  
31-08-2022  
Strategic Product Design

Committee  
  
Company

Dr. ir. Hende, E.A. van den  
Ir. Mulder, S.S.  
  
PreZero Netherlands