Poster: Circular packaging in home delivery of groceries

a step towards climate neutral last mile deliveries

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CIRCULAR PACKAGING IN HOME DELIVERY OF GROCERIES

a step towards climate neutral last mile deliveries

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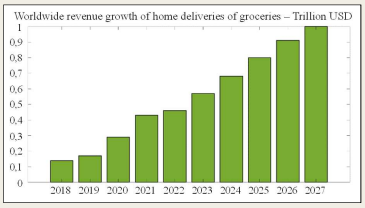
Introduction – 'Take, make, waste' model

Home deliveries of groceries have been expanding drastically worldwide.

Current business models are developed so that **packaging** is disposed of after one single-use.

Refrigerated vans are also part of the problem, as they require a substantial amount of energy to keep the temperature.

- Vehicles have low thermal efficiency, typically, around 40%.



Linear models exacerbate:

- Resource consumption
- Pollution
- Waste production
- Waste mismanagement

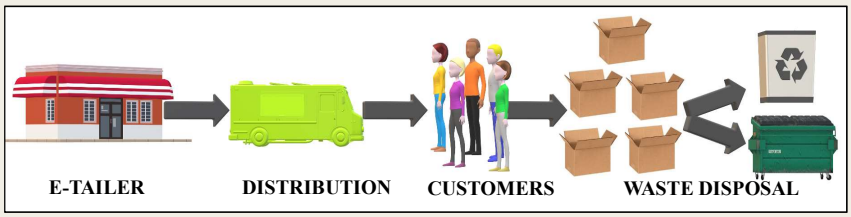


Figure 1. Linear model – packaging turns into waste after one single use and e-tailers do not have control over how packaging waste is sorted by customers.

Proposal – 'Make, reuse, repair, recycle' model

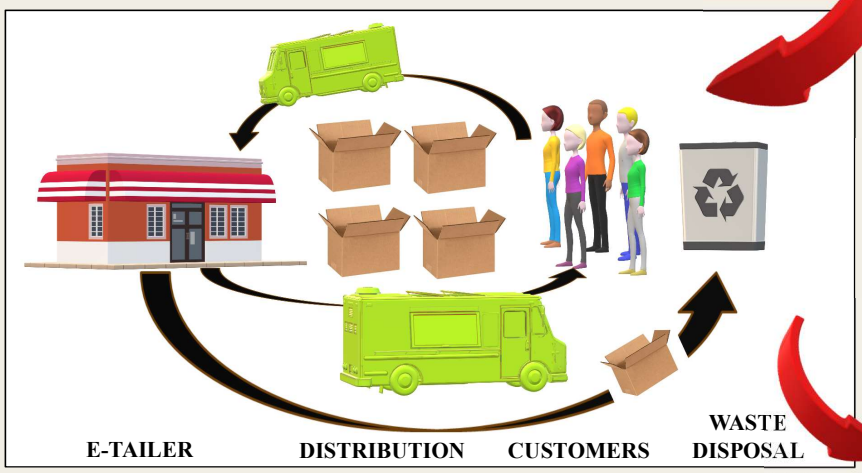


Figure 2. Circular model – packaging is returned, inspected and cleaned (and repaired if needed) to be used multiple times. After worn out, the boxes are sent to the recycling facilities.

Reusable and **biodegradable** box with insulation properties.

The solution includes ice packs to **cease the need for refrigerated vehicles**.

After the delivery, the box is either:

- **Collected** after customer emptied the box (attended deliveries)
- **Kept by the customer** and returned in the next delivery (unattended deliveries)

❑ **Slowing loops** (reusing, repairing)
❑ **Closing loop** (recycling)

Managerial implications

Implementing an efficient reverse logistics system sets off new opportunities to:

- Re-circulate primary packaging
- Control over packaging waste
- Increase flexibility to accept other returns

Policy implications

Policy makers are aiming at different strategies to encourage and/or force more sustainable practices, we emphasise:

- Reduced taxes for proven circular services
- Control and certify green labels

New processes, more costs?

New processes that might increase the overall costs:

- Inspection and cleaning of boxes
- Maintaining/repairing damaged boxes
- Space for storing and handling boxes
- Adjustments in the production lines

Contact

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