UPSTREAM INNOVATION

Practical solutions to achieve a circular economy for plastics
If you came home to find that your apartment was flooding, would you immediately start mopping up the water?
Upstream innovation requires a shift in mindset

It involves rethinking not just the packaging itself, but also the product and the broader business model, with the aim being to identify new ways of delivering value to users, whilst designing out waste.
1. **Elimination**
Packaging is eliminated while user experience is maintained or enhanced.

2. **Reuse**
Packaging is reused, rather than discarded after one use, creating value for both users and businesses.

3. **Material Circulation**
Packaging is designed so that the materials it is made from can be recycled or composted.
There are two approaches to Elimination

- **Direct Elimination**: Packaging that does not serve an essential function
- **Innovative Elimination**: Packaging that does serve an essential function
Nestlé
Bottle neck tear-offs

In just 18 months, Nestlé have eliminated 240 tonnes of plastic tear-offs (cap sleeves) from their Pure Life water bottles in Egypt. Instead, users are instructed to identify unopened bottles by listening for a ‘click’ when the cap is twisted.
Apeel
Edible coatings

Edible coating made from plant based materials that *extends the shelf-life* of fresh fruit and vegetables, reducing food wastage *without the need for packaging*. Apeel have launched produce lines with retailers including Walmart, ASDA and Kroger.
LUSH
Solid personal care products

Liquid personal care products are redesigned as concentrated solid formulations eliminating the need for packaging. LUSH is a global example, with 928 stores in 48 different countries. Since 2007, Lush have sold over 38 million naked shampoo bars globally, eliminating over 90 million plastic shampoo bottles.
There are four consumer facing reuse models
Replenish

Shared design for concentrates

A customisable, reusable bottling platform for liquid concentrates that can work as a shared design for different brands, 1 pod makes 6 bottles, cutting plastic packaging by 90%. Users screw pods to the bottle base and push down to release a measured solution for diluting at home.
MIWA & Nestlé
High-tech bulk dispensing

Nestlé and innovator MIWA have partnered on high-tech bulk dispensing solutions for instant coffee and pet food, reducing packaging by up to 90%. Bulk products travel in airtight canisters monitored by RFID/NFC tags to ensure product safety, track customer preferences, and control flow throughout the supply chain.
Loop
Popular brands, reusable packaging

Loop is a global reuse platform, offered online and in store by major retailers, which operates with more than **400 major brands** to supply more than **500 products** in reusable packaging. With no need for users to clean and sort containers, empties are returned (at a **97% return rate**) for professional cleaning, ready to be sold again.
VYTAL
Reusable takeaway packaging

Vytal’s new platform allows users to pre-order home-delivery and takeaway food in reusable packaging which can be returned in store or collected on next delivery. No deposit is required and users are incentivised to return empties within a two week period or be charged a penalty fee (resulting in a return rate of 97.5%).
There are three routes for plastic material circulation

- Recycling
- Composting
- Substitution
JOI
Recyclable nut milk packaging

A concentrated nut paste for making nut milk at home. By reformulating a liquid product into a solid, JOI eliminates the need for multi-material cartons and instead uses easy-to-recycle tubs delivered via subscription. The paste format means users avoid food waste by only making their desired quantity.
PG Tips from Unilever
Compostable tea bags

PG Tips are switching to a plant-based, compostable material derived from corn starch for their tea bags. This enables both the packaging and the tea leaves to be composted together. The brand has also started the removal of the plastic overwrap from the box.
Mondi & Fiorini International
Paper based pasta packaging

In collaboration, packaging producers Mondi and Fiorini International created paper based packaging with a paper based window for pasta. The solution enabled pasta producer Girolomoni to replace non-recyclable flexible plastic packs, while maintaining a product view for customers. It has also been adapted for rice.
Want to learn more about upstream innovation?

Download the Ellen MacArthur Foundation’s guide: Upstream Innovation: A guide to packaging solutions plastics.emf.org/upstream

100+ best practice case studies

‘Where to start’ & ‘What good looks like’ guidance

3 steps for upstream decision making