

UPSTREAM INNOVATION

Practical solutions to achieve a
circular economy for plastics

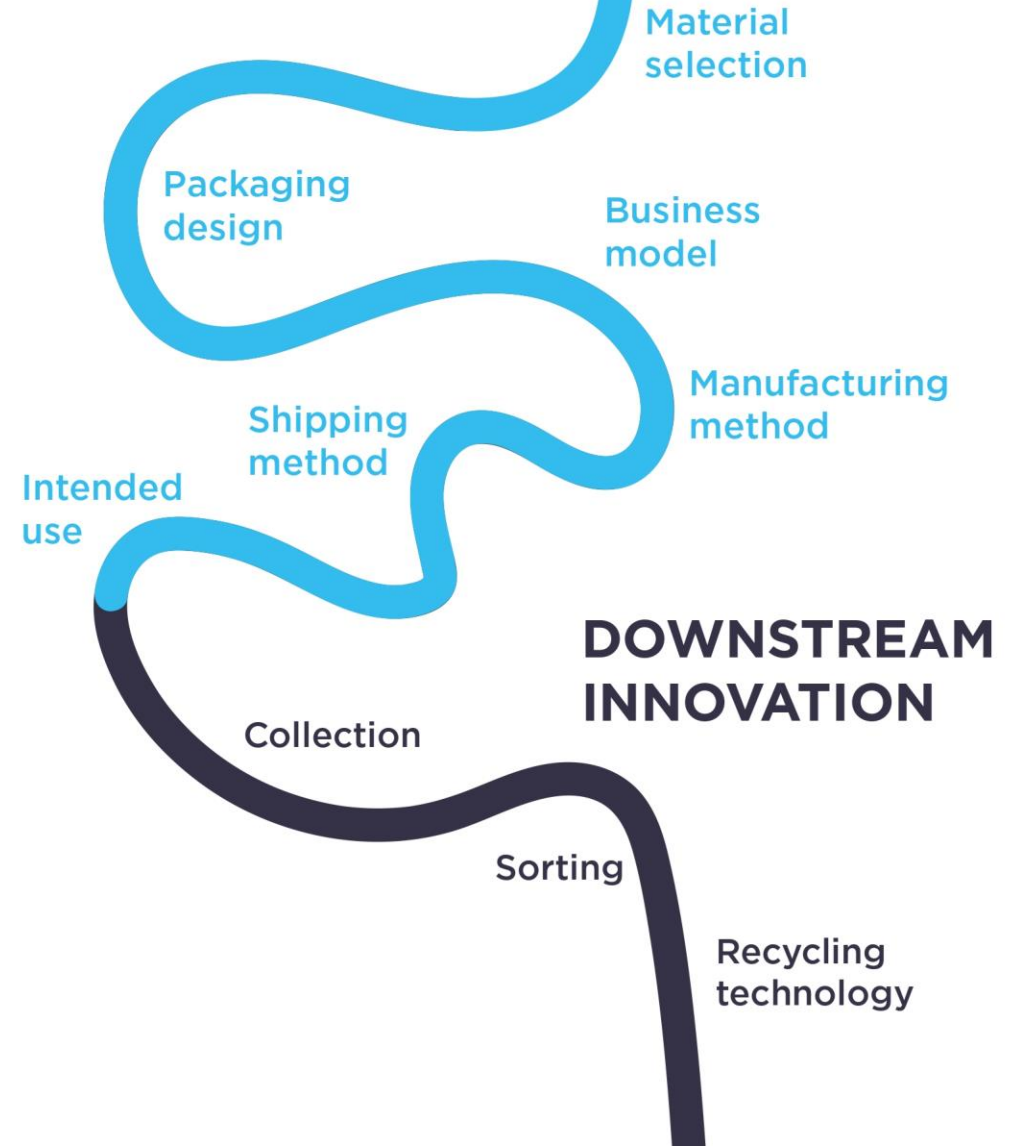


**ELLEN MACARTHUR
FOUNDATION**

WHAT IS UPSTREAM INNOVATION?

If you came home to find that your apartment was flooding, would you immediately start mopping up the water?

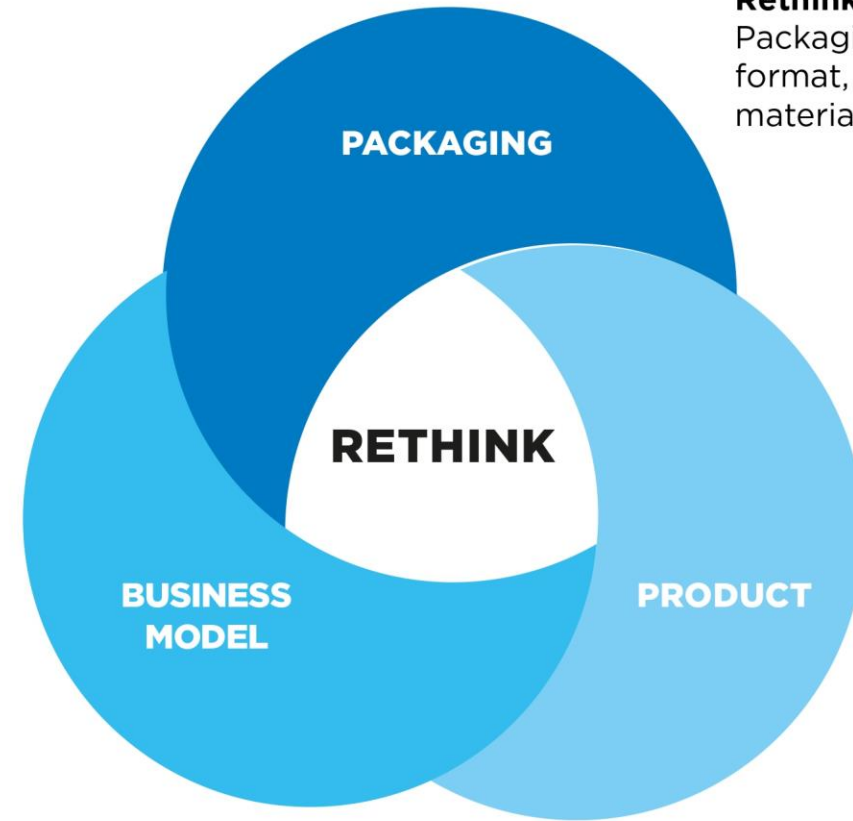
UPSTREAM INNOVATION



UPSTREAM INNOVATION MINDSET

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.



Rethink the packaging
Packaging concept,
format, components,
material choice.

Rethink the business model
Delivery model, supply chain,
location of production,
revenue streams

Rethink the product
Product formulation,
concept, shape, size.

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

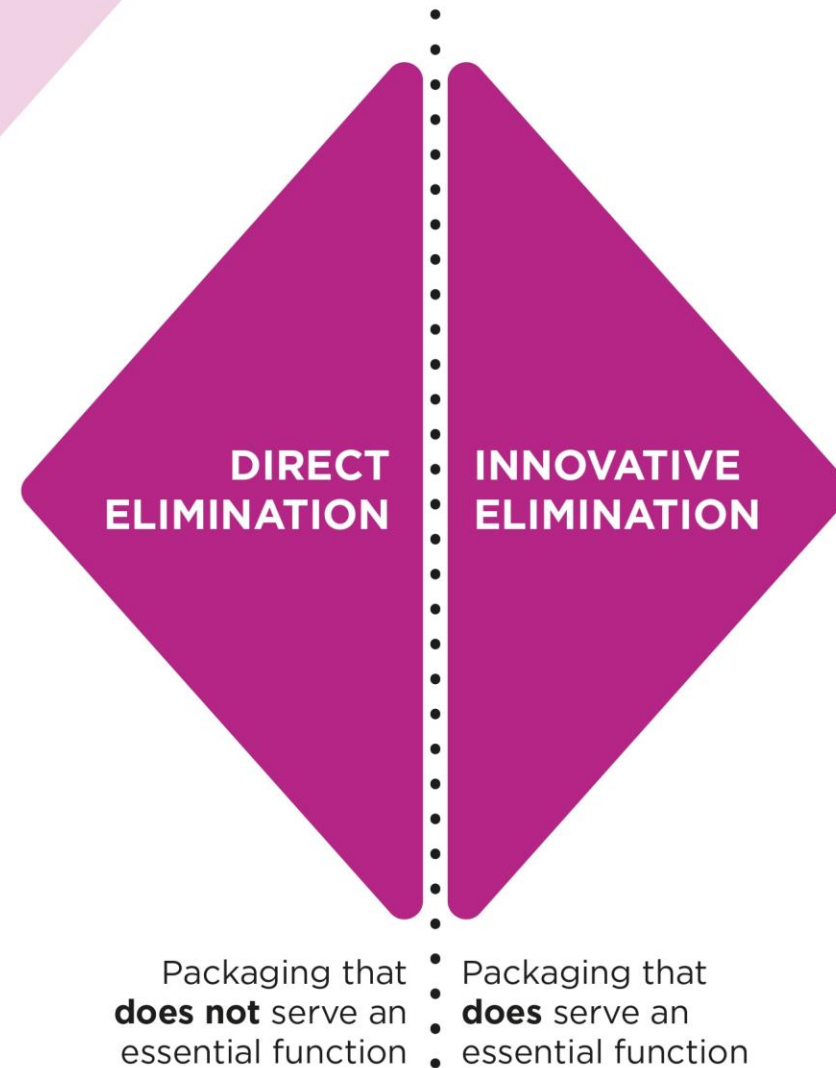
Material Circulation



Packaging is designed so that the materials it is made from can be recycled or composted.

STRATEGY 1
ELIMINATION

There are two approaches to Elimination



RETHINK
PACKAGING



DIRECT
ELIMINATION



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.

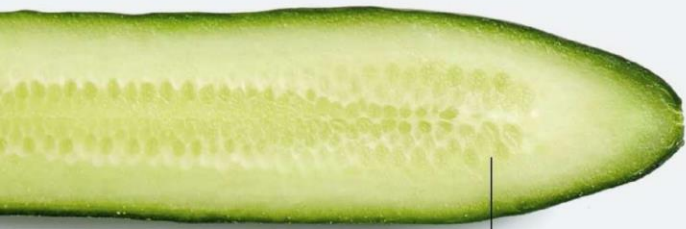
RETHINK
PACKAGING



INNOVATIVE
ELIMINATION



Oxygen
stays
outside



Moisture
stays
inside

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.



RETHINK
PRODUCT



INNOVATIVE
ELIMINATION



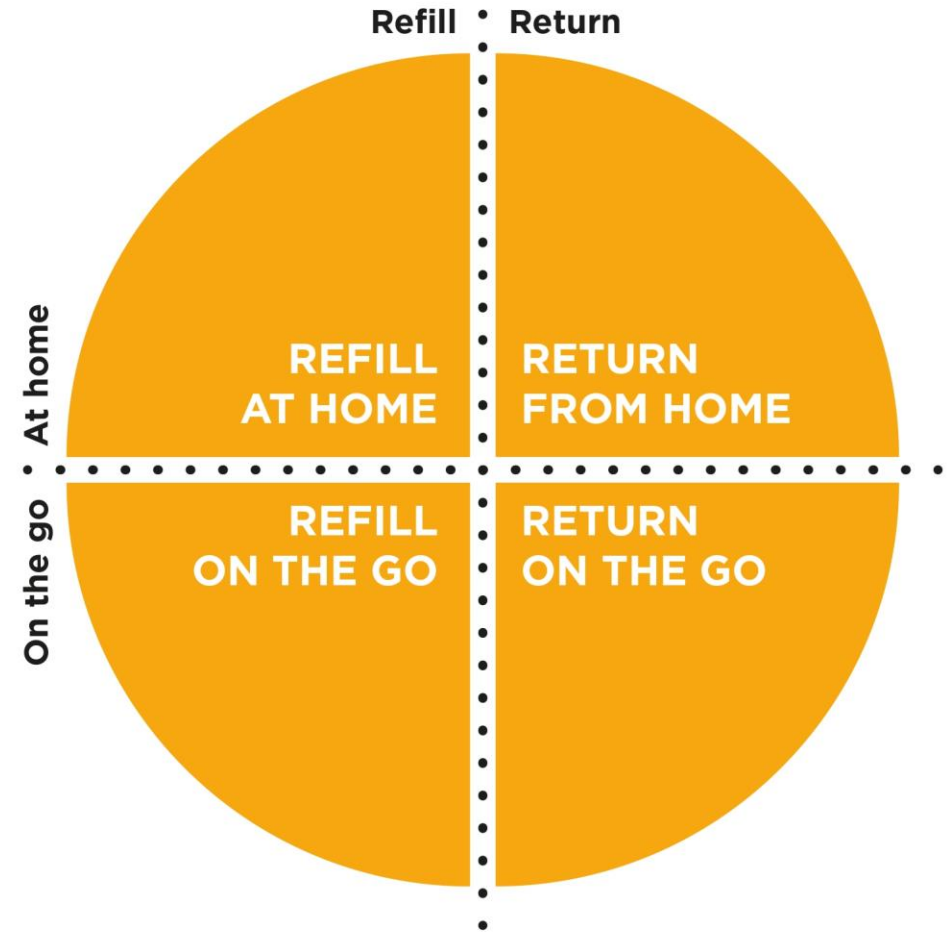
LUSH

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.

STRATEGY 2
REUSE

There are four
consumer facing
reuse models





RETHINK PRODUCT &
BUSINESS MODEL



REFILL
AT HOME



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.



Photo: Nestlé

RETHINK
BUSINESS MODEL



REFILL ON
THE GO



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.



RETHINK PACKAGING
& BUSINESS MODEL



RETURN
FROM HOME



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.

RETHINK
BUSINESS MODEL



RETURN
FROM HOME



VYTAL

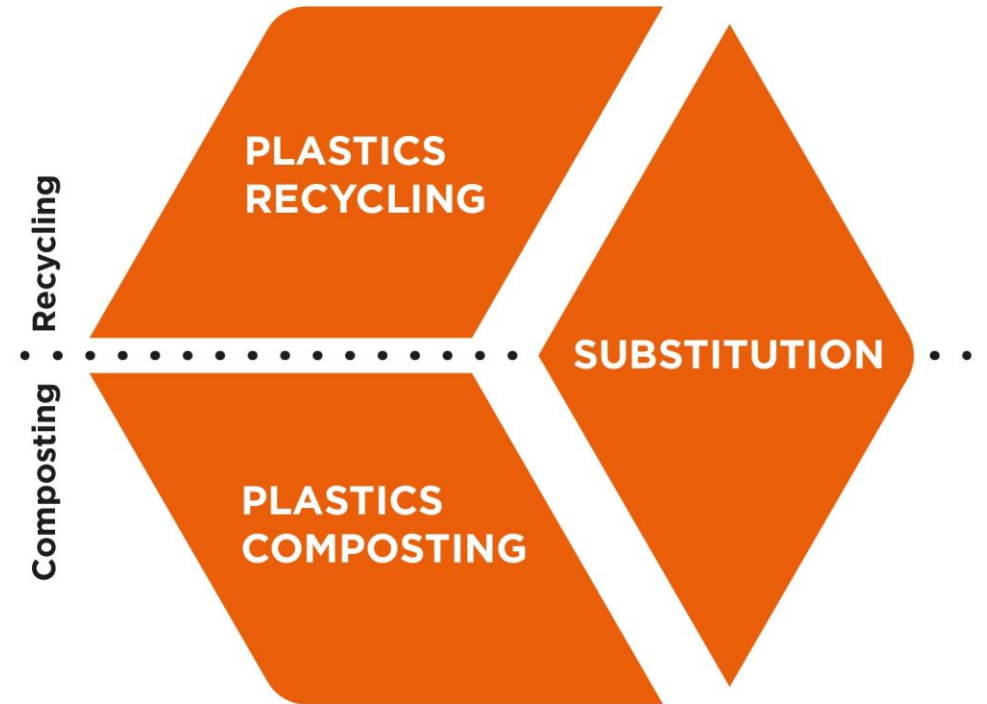
Reusable takeaway packaging

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%**).

STRATEGY 3
MATERIAL CIRCULATION

There are three
routes for plastic
material circulation





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**.



RETHINK
PACKAGING



PLASTICS
COMPOSTING



PG tips

160 Pyramid® bags

THE ORIGINAL

signature taste

BIODEGRADABLE

PLANT BASED PYRAMID® TEA BAGS



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.

RETHINK
PACKAGING



SUBSTITUTION



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

