

The New Reuse Economy

**How reuse systems and services
will revolutionize how we consume**

Introduction

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Problem

The Throw-Away Economy: where 10% of wood harvested,¹ 20% of aluminum mined,² 40% of plastic created,³ and 50% of glass produced⁴ goes primarily to make single-use packaging for consumable products. These are used once and then either trashed, recycled or littered. This system is built around the concept of packaging as a product. It requires extensive global supply chains (for production and recycling) and justifies the unnecessary extraction of precious natural resources on the front end, while creating significant amounts of waste and pollution impacts on the back end.

Today, one trillion disposable food and beverage packaging items are used each year in the US, comprising 67% of litter found in the environment.⁵ Unfortunately, the science shows that switching from single-use plastic to another single-use product trades one set of environmental issues for others. We may not have plastic in the environment, but now we're cutting down more trees, creating more climate pollution, or using more toxic chemicals.⁶

And while recycling is still important, it's nowhere near enough. Somewhere along the line, we forgot that the first two R's – reduce and reuse – are way more important for the environment than recycling. While “light-weighting” packaging for source reduction has gained some attention, brands, NGOs and government officials have spent most of their time, energy and resources focused on recycling because frankly, it's the easiest. This “recycling-first” approach has been the standard largely because it doesn't threaten the one-way, throw-away, disposable paradigm that governs current practices and supply chains.

The good news is that consumer brands, beverage, and fast food companies are signaling that they want to address their role in plastic

pollution, overconsumption and waste. Some of these brands, as well as city government leaders, have also expressed interest in moving beyond recycling to set up new reuse systems and infrastructure for delivering their products.

But companies have invested in one-way packaging and supply chains for the last 60-70 years, and cities have invested in waste management, litter mitigation, and recycling systems to clean up at the end of the chain. To shift to a reuse economy – where packaging is a service and not a product – will require re-imagining and remaking supply chains while also investing in and building the infrastructure to support it. **Today, the core barriers to the New Reuse Economy are:**

- 1. Lack of vision (and alignment around vision)** – e.g. “The Imagination Gap.” For most people, the future is defined by how things are today. While there's some acknowledgement that reuse/refill should be a part of the future, there are wide ranges of understanding around the associated issues – and no general consensus on what it should look like.
- 2. Lack of replicable pilots and scaled business models.** Today, the scaled models for reuse/refill are on-site dining, beverage refill, refill-at-home, and tertiary packaging (warehouse transport). In many of the other sectors, reuse is niche and not operating at scale.
- 3. Lack of infrastructure.** In order for reuse to scale, we will need significant public and private investment in interoperable collection, logistics and washing infrastructure that can serve multiple companies at the same time. In practice, this will require the standardization of reusable packaging across formats so they are interchangeable across reuse service providers and brands.⁷

- 4. Convenience norms and perceived lack of consumer demand for – and participation in – reuse solutions.** Some company leaders are concerned that consumers and businesses will not like or participate in reuse/refill systems because of convenience norms.
- 5. The low cost and convenience of disposables.** Policies to restrict and penalize the use of disposables and put reusables on even (or advantaged) footing will be key.⁸

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Opportunity

The New Reuse Economy: where consumable products come in reusable packaging, and where reuse infrastructure – for collection, reverse logistics, washing/sanitizing, and refilling/restocking – serves consumers in local and regional supply chains. This system is built around the concept of packaging as a service and not a product. It's the foundation for a circular economy that stewards the resources we take from the planet by creating a package once and reusing that package in closed, regional loops for as long as possible – minimizing natural resource extraction, preventing waste and pollution, and creating local economic opportunities and jobs.

Impacted business sectors: food service, beverage, consumer packaged goods, brick & mortar retail, e-commerce, waste management.

When we discuss the new reuse economy, we're primarily talking about consumable products and their packaging. Take a look in your garbage, recycling (and even composting bins) and check out all the packaging there. Those are the targets for disruption. **Over time, we want to shift more of this packaging from garbage, recycling or composting streams to reusable packaging and service streams** – because of the significantly greater environmental benefits and economic opportunities, as outlined below.

While this may seem complicated, **the design of the reuse services and systems will have similarities across business sectors.** At the end of the day, these services require collection from the consumer, reverse logistics, washing and sanitizing, refilling and/or restocking. Because of the challenges and costs associated for individual companies going it alone, it's important for businesses to be able to operate on platforms that can serve many companies at the same time.

Infrastructure

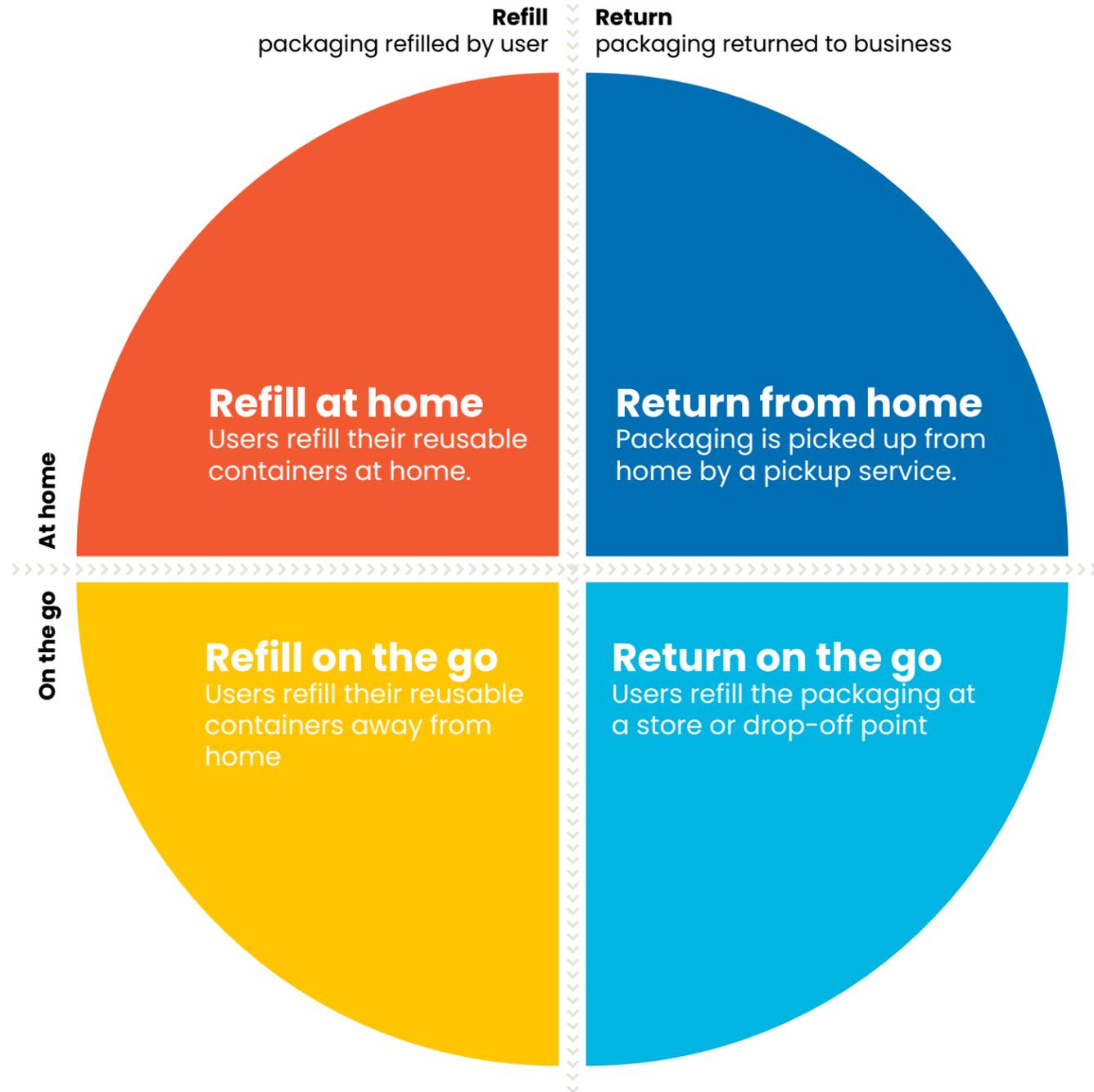
To achieve scale will require the utilization of existing infrastructure (like incorporating reusable packaging into curbside recycling or bottle deposit collection), **and the development and deployment of new infrastructure** (like "milkman" bins on your front porch or in the apartment complex to collect reusable packaging when deliveries come).

In order to think critically about the potential, it's helpful to consider and build on frameworks like the **Ellen MacArthur Foundation's four reuse models:**⁹

- 1. Refill at home.** Users refill their reusable container at home (e.g. with refills delivered through a subscription service). Brands can sell the primary packaging once – like a hand soap dispenser or a home soda fountain – and then sell the refill products. This is a good option for products where water, which can easily be added at home, is the main ingredient. It doesn't require any new infrastructure, and several brands have been able to scale this model for product delivery.
- 2. Refill on the go.** Users refill their reusable container away from home (e.g. at an in-store dispensing system). In some models, the consumer either brings their own container or rents or borrows a container from the vendor to fill on the go. These types of reuse models don't necessarily need new infrastructure, as the reuse "loop" is driven by the consumer returning to the same refilling station. Only if they're bringing the packaging back for the brand-owner or retailer to clean will some new cleaning and reverse-logistics infrastructure likely be needed.
- 3. Return from home.** Reusable packaging is picked up from home by a service (e.g. a logistics company or through a curbside collection provider). This works especially well for "pre-filled" products in reusable packaging (beverages, personal care, cleaning products, etc) and take-out food service packaging. For this model, modifying existing infrastructure will be important – either through incorporating reusable packaging into curbside collection for recycling, or by adding "milk-man-type" bins outside homes and apartments where logistics companies can pick up reusable packaging as they drop off new packages.
- 4. Return on the go.** Users return packaging at a store or drop-off point (e.g. in a deposit-return machine or kiosk). This approach will require modifying existing infrastructure – like incorporating reusable containers into existing return-to-store deposit-return systems for beverages. New infrastructure – like kiosks that can accept reusable take-out containers and cups, located in parks, office buildings and street corners – will also be needed.



The four reuse models



Once the consumer has returned their packaging, the next phase is similar across product categories and requires:

- 1. Collection and reverse logistics.** Trucks pick up reusable packaging from bins or kiosks at home, at stores or on-the go. They are then brought to a washing and sanitizing hub. Curbside recycling or deposit-return materials recovery facilities (MRFs) can also be retooled to separate reusable packaging for shipping to the wash hub.
- 2. Washing and sanitizing.** The wash hub receives reusable packaging to be cleaned, sanitized and dried.
- 3. Refilling and/or restocking.** The wash hub can ship containers that don't contain product (like to-go containers and cups) directly out for restocking. Packaging that needs to be refilled can either be refilled on-site or shipped out for refilling and restocking

At scale, these systems need to be able to serve many companies and accommodate many types of reusable packaging. Wash and refill hubs could be built next to MRFs (material recovery/recycling facilities) in the industrial parks outside of major metropolitan areas – serving the region.

Supply chains for consumable products would need to be re-organized around local and regional supply and reverse logistics loops. For example, instead of cleaning products delivered in one-way packaging from a centralized shipping hub, distilled cleaning solutions could be transported in bulk to refill hubs, where water could be added to the reusable packaging with the solution in it. The brand-owners in this case could lease the packaging from a reuse service provider and deliver concentrated cleaning solutions in bulk.

How reuse services work



The core concept is remaking packaging as a service and not a product. And shrinking massive single-use supply chains into local and regional reuse services.

Scaling will require aligning vision, pre-competitive collaboration, investment and likely policy support. But the payoff in remaking consumption patterns to reduce unnecessary natural resource extraction, waste and pollution – while creating resilient regional supply chains and jobs – will be worth it.

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A vision for the future

The New Reuse Economy is built around a central question: “How can we get people what they want and need without all the waste?” A huge portion of the throw-away economy can be completely replaced by reuse systems and services. In the city of tomorrow:

- ✦ All restaurants serve you on real plates and cutlery, and cups, including fast food.
- ✦ To-go coffee and drinks are provided in returnable, reusable cups.
- ✦ Restaurants, grocery stores and delis use services that provide them with clean, sanitized reusable to-go containers for prepared food, takeout and delivery.
- ✦ At the ballpark and concert, everyone is drinking beer and soda out of real cups.
- ✦ Same thing for your favorite beer, wine or soda at home. They all come in refillable bottles.
- ✦ You can order groceries, cleaning and personal care products, and even clothing delivered to your home in reusable containers, totes or mailers (or pick them up in reusable packaging at the store).
- ✦ And delivery drivers will pick up your reusable packaging when they drop off. Or you can put the reusables in with your recycling. Or drop them off at the store, or while you're on-the-go.
- ✦ Tens of thousands of people are employed throughout the area in delivery, pick-up, cleaning, stocking and logistics.

- ✦ Litter and solid waste costs are down and community pride is up.
- ✦ None of these innovations required you to bring your own anything. People got tired of single-use waste. And entrepreneurs said we can do it without single-use, and we can do it better.
- ✦ Community leaders and policymakers worked to create the conditions for this thriving reuse economy. Then the big companies saw this was the future, and everyone started doing it.

In order to make this vision a reality, we need:

- 1. Businesses to overcome the inertia of the status quo and start designing and building new reusable delivery systems, supply chains and infrastructure for their products** (through pre-competitive collaboration and public-private partnerships and investment to scale).
- 2. Policies that penalize disposables and incentivise reusables** – including supporting the buildout of inter-operable reuse infrastructure – and
- 3. A wholesale cultural rejection of disposability in favor of reusability.**

In this future, we will have access to services that make reuse clean, safe, affordable, accessible and fun. And we will be getting the things that we want and need in ways that don't generate waste or pollution, or the unnecessary mining and clearcutting of our planet home. ♦



Endnotes

- 1 World Wildlife Fund, [Industry Overview: Pulp & Paper](#)
- 2 Waste360, [Profiles in Garbage: Aluminum Packaging](#)
- 3 National Geographic, [Fast facts about plastic pollution](#)
- 4 Glass Packaging Institute, [Learn About Glass](#)
- 5 Upstream, Reuse Wins Report
- 6 Id.
- 7 RESOLVE-PR3, [Reusable Packaging System Design Standard](#)
- 8 Upstream, [Roadmap to Reuse](#)
- 9 Ellen MacArthur Foundation, [Reuse: Rethinking Packaging](#)