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Transit /
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packaging

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“35 percent of all transport packaging globally is already reusable, driven mainly by the cost-savings and handling efficiencies offered by reusable transport packaging systems”.—Australian Packaging Covenant Organisation (2022)¹

As a major city with a port, Tauranga is the location of many national and international distribution, dispatch, warehousing and storage companies and operations. Many goods pass through the city, along with the packaging used to transport them. Therefore, transit packaging is an area where important reuse gains could be made for the city.

Transit or transport packaging can be understood as business-to-business (B2B) or business-to-consumer (B2C). The two systems tend to display differences in the size and scale of the packages required, but also the logistical pathways through which the packaging moves. B2B transit packaging includes pallets, crates, drums, intermediate bulk containers, and boxes, as well as dunnage (the components used to protect or contain bulk loads of goods, e.g. wraps, strapping and cushioning fillers).² B2B transport packaging usually stays within distribution supply chains.

B2C transit packaging includes cardboard boxes, parcels and courier satchels, and other materials associated with posting goods, such as bubble wrap.³ The practice of transporting products directly to consumers has increased significantly with the growth of online ordering and e-commerce, particularly since the global pandemic. While smaller than B2B transport packaging, B2C transport packages present particular challenges as they are diffused across individual households and workplaces.

B2B TRANSIT PACKAGING – A GOOD NEWS STORY FOR REUSE

B2B transit packaging is a global good news story for reusable packaging systems. Relative to other sectors of the economy, **the transport and distribution sectors are major users of reusable packaging**, with most of the reusable packaging systems in existence globally operating in this sector.⁴ Specifically, 35% of all transport packaging globally is reusable,⁵ constituting 50% of the overall market worth of all transport packaging (i.e. US\$100 billion of US\$200 billion).⁶ In Europe, reusable packaging accounts for 40% of the packaging used for distributing fruit and vegetable products.⁷ In Australia, 81% of the 2.9 million tonnes of single-use packaging avoided by reusable packaging systems in 2019-2020 was attributed to reusable pallets alone.⁸

With its strong foothold in the market, **reusable packaging has been able to prove its value, generating significant long-term cost savings in key supply chains, and simplifying global logistics by creating handling efficiencies.**⁹ Consequently, while policy is desperately needed to open up reusable packaging systems in B2C markets, within B2B transit packaging systems “there seems to be an autonomous driver for the increasing interest and introduction of more sustainable reusable packaging systems.”¹⁰ This autonomous drive may also be propelled by the fact that:

- Systems for the distribution of goods are organised by companies that specialise in logistics—a necessary skill for operating reusable packaging systems generally.
- Well-established third party reusable packaging providers exist in the transport packaging sector who relieve other members of the supply chain (e.g. producers and retailers) from the responsibility and effort of making reuse systems work.¹¹
- Reusable transport packaging has its own industry associations with the capacity to undertake research and advocacy to advance members’ interests.¹²
- The volume of goods being moved creates

economies of scale and functionality can be prioritised over individualised aesthetics given the packaging is not consumer-facing. Both factors favour standardisation that increases efficiency and drives down costs.¹³

“Standardization allows for automatization and cost reduction, reaching larger markets. Indeed, the globalized world of trade would be impossible without standardized containers.”—Coelho et al (2020)¹⁴



How does reusable B2B transit packaging work?

Reusable B2B transit packaging systems rely on pools of fleets of packages that are more durable than their one-way counterparts (e.g. sturdy pallets, cloth wraps rather than shrink wrap, plastic crates rather than cardboard boxes). These pools are typically owned by third-party companies that charge supply chain actors to use the packaging. The packaging moves across the supply chain, so usually the system includes software to track the inventory (which can be particularly complex given the volume of goods, the pace at which they move, and the number of times they change hands).

“There’s a network piece here - you are running a system - you obviously need the scale of assets circulating at any one time, but you also need a network of points - service centres servicing products, return points, logistical operators moving things around.”—Reusable packaging provider interviewee



In addition, the system will usually be geographically connected with a national network of centres through which the packaging passes after each cycle, to be prepared for reuse. For example, inspection, repair and maintenance (e.g. to fix broken or damaged fabrics

such as reusable pallet wraps, or broken pallets) and/or washing (if food has been involved, e.g. produce crates). This enables the reusable product to be kept in service for longer via refurbishment for recirculation, rather than simply discarded when damage occurs.¹⁵

“repair is a must! There’s no point going reusable if you don’t repair, otherwise your reusable packaging goes to landfill”—Reusable packaging provider interviewee



CHEP PALLET AND CRATE: IMAGE SUPPLIED



CASE STUDY: CHEP

CHEP is a global company that specialises in reusable B2B transit packaging, especially reusable pallets and crates. It operates in 60 countries (including New Zealand) and manages the largest reusable packaging pool in the world, with roughly 500 million pallets in circulation globally.¹⁶

CHEP's business model is based on pooling; the company owns and manages pools of standardised packaging that are shared by multiple businesses and industries across supply chains. The business model is based on charging either a daily use rate or a trip fee to supply chain users. The system relies on the participation of actors across the supply chain of the sector being serviced—from producers, growers and retailers. CHEP has secured high levels of participation because the pooling system relieves companies from having to continually purchase or arrange waste management or recycling for single-use pallets and crates. Outsourcing to CHEP also allows supply chain actors to focus on their core work of producing and retailing products, rather than purchasing and managing packaging.

"Share and reuse has been in our DNA since day one. We explain it by saying, your expertise is in manufacturing products, it's not in packaging and tracking where your packaging is going and disposing it. Therefore, don't put a whole lot of money and resource into doing that. We have a reusable packaging system. All you need to worry about is ordering from us."



In New Zealand, CHEP is an integral part of New Zealand's fast-moving consumer goods distribution. CHEP's pallets and crates are predominantly used in the food and produce sectors. They have 8 main service centres spread across the country where pallets and containers are stored and reconditioned (e.g. minor repairs, plastic crates washed, and cracked boards on pallets replaced), which extends the lifespan of each packaging unit, bringing both environmental and economic benefits. CHEP's service centres operate almost 24/7, with reconditioning and dispatching occurring on a daily basis. All of CHEP's pallets and containers are standard shapes and sizes, to ensure supply chain efficiencies. CHEP manufactures its pallets in New Zealand using FSC certified timber, and manages the end-of-life of their products.

B2C REUSABLE TRANSPORT PACKAGING: MORE WORK TO DO

In comparison to B2B transit packaging, there are very few international or national examples of reusable packaging systems for B2C transport packaging, and those that do exist often cost considerably more than single-use packaging systems. In New Zealand, **Better Packaging Co** has created a durable courier satchel that is designed to be reused,¹⁷ but currently no accompanying system or network exists to retrieve, service, maintain, and recirculate the package. However, companies wishing to use these satchels could choose to purchase a fleet or pool of these reusable packages, and then develop a bespoke returns system with their customers in order to retrieve the satchels for reuse. This type of system could work best for products consumers buy on subscription. **Repack**, which operates in Europe and North America, has developed a reusable courier satchel whereby brands who choose to use it can either operate an in-house retrieval system (as with Better Packaging Co), or can pay a fee per cycle that covers the cost of the packaging's return (using the traditional postal system infrastructure) to Repack's central cleaning and redistribution facility in Estonia.¹⁸



REUSABLE SATCHEL BY BETTER PACKAGING CO: IMAGE SUPPLIED

TRADE-OFFS AND OPPORTUNITIES FOR TRANSIT PACKAGING

B2B transport packaging is seen as a 'low-hanging' fruit for upscaling reusable packaging systems; demand is already strong and continuing to grow because established third party operators are able to offer businesses considerable cost savings compared to single-use alternatives.¹⁹ Some zero waste advocacy organisations believe very ambitious binding reusable targets for the sector are realistic, e.g. 100% reusable by 2030.²⁰ Furthermore, while B2C reusable transport packaging is very nascent, some of the sectors this packaging serves are potentially well-suited to reusable packaging systems because they include features that enable streamlined reverse logistics (e.g. home delivery by courier or postal companies and/or repeat deliveries through subscription models).

Upscaling reusable transport packaging in New Zealand would require existing reusable packaging companies to expand into new supply chains or new products, or for new, emergent players to be able to establish to tackle these single-use packaging waste streams. Achieving these outcomes is likely to require a degree of collaboration, coordination and potentially regulation or economic incentives to move through some key roadblocks:

Breaking into fast-paced supply chains is difficult

The tightly-controlled, fast-paced, 'just-in-time' model of global and national high volume distribution systems can lend itself to the optimised reverse logistics that make reusable packaging systems fly. This has been greatly leveraged by established organisations like CHEP. However, these qualities can also make it more difficult for disrupters to break into the sector. The 'well-oiled' machine of distribution systems may struggle to adapt to novel ideas that require a change of workflow (even if it seems more efficient), such as reusable pallet wrap. Getting these ideas from conception to crossing the finish

line may require regulatory support from Government, or efforts by industry sectors to facilitate trials.

Securing supply chain participation is hard for new entrants

The success of B2B reusable packaging partly lies in its ability to bring cost and efficiency savings. However, this requires economies of scale and an organised network to function, and therefore works best with pooling systems operated by a third-party. Establishing a pooling system, especially for packaging lines that lack a strong history of reuse, requires big upfront investments that third-parties are unlikely to make without certainty that the investment will pay off. Given the success of a reusable transit packaging model relies on supply chain participation, certainty will tend to require confidence that this participation will be forthcoming. For emergent players, brokering supply chain participation in trials, let alone eliciting long-term commitment to participate, is a formidable task.

covid-19 and associated supply chain disruptions has created aversion to innovation

The covid-19 pandemic has greatly tested global and national supply chains, and strained or constricted available resources amongst producers, importers and distributors, and retailers. It has also greatly increased pressure on postal and courier services due to increased online ordering. Introducing both B2C and B2B reusable transit packaging has the potential to reduce costs and increase efficiency and supply chain resilience in the medium- to long-term, but in the short-term requires trials and investments that have the potential to cause unwelcome disruption. Ultimately, covid-19 has created heightened reluctance to try new things, and led to pre-planned pilots for reusable transit packaging being put on pause.²¹

B2C supply chain participation

As a starting point, B2C reusable transit packaging may be most easily trialled in 'closed-loop' situations that involve repeat deliveries, i.e. subscription models. For example, home meal box kits, vegetable boxes,



magazines and newspapers. Achieving this would require the voluntary participation of businesses who currently home deliver products, as well as cooperative relationships with courier/postal service participants.

OPPORTUNITY: REUSABLE PALLET WRAP

In New Zealand, reusable pallet wrap offers a high-impact opportunity for reusable transit packaging given the use of single-use shrink wrap/stretch film remains substantial. In the food distribution sector, a typical pallet uses about 50 metres of single-use stretch film, and roughly 8000 pallets move through the system daily, generating roughly 400km of stretch film a day.²² And yet, many of the pallets themselves are part of a reuse system, which could potentially be leveraged to enable reuse of the wraps as well. Furthermore, a handful of reusable pallet wrap companies exist in New Zealand already, including Green Spider,²³ Gaprie's P.C. Nets,²⁴ and Palletite.²⁵

Aside from reducing waste, reusable pallet wraps bring other co-benefits in terms of operational efficiencies and worker health and safety. For example, the Palletite reusable sleeve is designed to be transparent (like shrink wrap), but is faster to apply, easily adjustable to any

size pallet load, can hold very heavy loads, and is more resistant to puncture and damage than shrink wrap. It also reduces the need to make trips with pallets on forklifts. The wraps are easy to fold and space efficient for bulk dispatch to manufacturers and packhouses, and are barcoded to enable tracking through the supply chain. Each Palletite usage replaces 300g of stretch film.

To date, reusable wraps in New Zealand have mostly been used to replace stretch film in internal warehouse and distribution centre storage, rather than to replace the wrap used to contain pallet loads of product as they move through the supply chain between warehouses, distribution centres and retailers. The latter would require trials with major suppliers, and a degree of certainty of participation to justify investing in a network. For example, although Palletite received a Waste Minimisation Fund grant to develop their reusable pallet wrap prototype, the business model is not in the wrap itself, but in the reusable packaging service, which Palletite has been unable to pilot. Palletite has estimated that to run their system effectively, they would need a pool of roughly 250,000 units, with about three manufacturing and repair centres around the country that would employ a total of 70-80 machinists, which could be financed by charging out the use of the wrap at the same rate as single-use film. However, this level of service cannot be supplied without the participation of supply chain actors.

TAKING ACTION

The *Taking Action* chapters of this report set out recommended actions that local and central government and industry can take to make it easier and more cost-effective to establish, sustain and grow reusable packaging systems across the economy. The recommendations have been designed to address some of the trade-offs and opportunities raised in this *Sector Snapshot*. If you want to know more about what can be done to grow reuse, you can jump straight to the *Taking Action* chapters.

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