



CASE STUDY

Harnessing the power of AI to reduce food waste

JULY 2024

Summary

A system optimising inventory and reducing food waste has been adopted by over 80 Foodstuffs supermarkets across New Zealand.

WhyWaste leverages artificial intelligence (AI) and data analytics to track thousands of product lines.

Real-time data insights empower informed decision-making, improving stock management and forecasting.

Stores using the system have seen significant waste reduction.

Benefits extend to sustainability goals, aligning with Foodstuffs' commitment to reducing waste and delivering quality to customers.

Zeroing in on stock rotation as a driver of food waste

With between 10 and 50 thousand products on the floor of the average Foodstuffs supermarket, a third of which are considered 'short shelf life', managing stock levels and rotation is critical in ensuring product freshness and quality, satisfying customer expectations and minimising food waste.

Stock rotation aims to prioritise the sale of older items first by ensuring these are the most readily available to customers. It contributes to optimising inventory management and demand forecasting with the aim of preventing over or understocking and reducing food that is not sold to customers as intended.

Historically, stock rotation has been a largely manual process involving team members checking the remaining shelf-life of products on a shop floor. The process is often ad hoc and incorrectly or inefficiently rotated stock has been identified as a driver of inefficiencies and food waste for food retailers. Insights and data for long term improvements to buying and forecast are not systematically captured or centralised for easy analysis.

A solution that harnesses the power of AI

More than 25 percent of Foodstuffs North Island stores, including New World Whangaparāoa, Four Square Matakana, and PAK'nSAVE Westgate are embracing new stock rotation solutions that harnesses the power of artificial intelligence (AI), saving their owner operators time and money, reducing food waste and ensuring consistent product quality and improved customer satisfaction.

WhyWaste is a system that uses AI and data analytics to optimise inventory levels and reduce food waste for food retailers. Through advanced algorithms, the system tracks thousands of product lines at any one time, prompting users to check, rotate, reduce or clear particular lines of stock as needed and delivering consumer and product insights and recommendations to retailers.

By accurately predicting demand and identifying potential surplus or at-risk items, the system enables retailers to make informed decisions about purchasing, pricing, and product placement. Additionally, the system supports proactive measures such as dynamic pricing strategies, targeted promotions, and donation or discount options for perishable items nearing expiration.

The system is based on a First-In-First Out (FIFO) philosophy, an inventory management system commonly used by businesses that work with perishable goods or products with use-by dates. The basic premise of FIFO is that the first items added to inventory are made available to consumers to be sold first.

Brent De Jongh from WhyWaste says that while the system is exceptional for short-shelf-life products like meat and dairy, the system can be used for any product with a barcode or PLU number, including very shelf-stable products which may have years remaining on the use by date. "While rotation requirements on these items are much lower than short-shelf-life items, the fact that they are tracked by the system gives a retailer peace of mind to know that when they do need checking, they will be notified, removing the need for regular manual checking."

David Whyman of Four Square Matakana agrees. He says that in smaller stores like his, which have lower stock turnover than some of the larger supermarkets but still stock a wide range of products, systematic stock rotation is vital.



"There are items we may not sell on a weekly basis, so managing the shelf life of these products is essential. By having all our barcoded stock lines in the system, I can be certain we are managing our wide range of stock without having to individually check items. I feel confident the system is doing this for me."

Setting up a retailer on the WhyWaste system involves an initial upload and scanning of products with a barcode, entering the best-before or expiry date and assigning a date check rule. It can be integrated with the store's Point of Sale (POS) system or stand-alone.

The system then prompts operators on the bespoke management of their stock using a "traffic light system". As an example, a green prompt can let the team know the product has seven days left to be sold. If the item has not been sold, the store has the option to reduce to clear, stock rotate or both. The store can also choose settings for red and amber for example amber can be set at three days (if it has not been sold, then last chance to reduce to clear), and a red prompt can indicate the product needs to be removed from the shelves.

These prompts give stores the opportunity to use markdown optimisation pricing strategies or promotions to help sell stock through before it needs to be removed from the shelf. James Cardno, Owner Operator of New World Whangaparāoa says the prompts trigger his team to reduce the cost of an item or special it in some other way which means the items almost always sell through before needing to be removed.

"We have seen a significant decrease in items going to waste since we installed WhyWaste. The prompts from the system also mean there are more specials for customers, which is really important to us also."

About Foodstuffs

Foodstuffs North Island is a 100% New Zealand owned co-operative, with 323 owner operated stores in communities across Te Ika-a-Māui operating under the Four Square, New World, PAK'nSAVE and Gilmours brands. With 2.7 million customer visits in our stores and online every week and 24,000 Foodies across the North Island, we play a big role in Kiwis' lives. Our purpose is to make sure New Zealanders get more out of life and we aspire to be one of the most customer driven retailers in the world.



Results

Since the WhyWaste system has been introduced, all three stores have reported significant time savings managing stock rotation, reductions in food waste, improvements in stock management and forecasting and a decrease in customer complaints.

Customer experience

One of the key motivators for James Cardno (pictured above) for introducing the system was the desire to deliver the best customer experience. "We are always doing our utmost to make sure customers get high-quality products that have a reasonable shelf-life left on them. Previously my team were likely to over-check stock because we were vigilant about making sure items met our quality standards. Now with WhyWaste, we know the system will alert us well in advance when it is time to check, rotate or clear stock. As a result, we've noticed a significant drop in customer complaints which is a great outcome."

Time savings

James reported that prior to introducing WhyWaste, the date checking was a continuous, and at times overwhelming task that would take at least 90 minutes per day. He says that with WhyWaste, the task now takes 20–30 minutes. "The efficiencies are huge and as a result the team love it. It makes their jobs easier, and I can feel confident our stock rotation is being optimised."

Food waste reduction

The store owners say the process and information generated by WhyWaste is helping with overall upskilling in food waste reduction in their stores. According to James, "items that are regularly not selling through are a catalyst for a conversation and to work as a team to understand the root cause of waste and how we can prevent it." He says he has seen a real shift across the board in his teams' awareness of food waste and how to reduce it. "My team are now proactively coming to me with ideas of how to optimise stock and make sure it sells, it's changed the culture within our store."

Meanwhile, in Four Square Matakana, David says the efficiencies, time savings and insights from introducing WhyWaste has seen a massive 90% reduction in food waste in their store. "It's been an absolute game changer for us. The team find it very gratifying to know that more food is getting to our community."

Data insights

All three operators agree that alongside the day-to-day benefits of stock management, the data and insights generated from the system are invaluable. WhyWaste has revolutionised their demand forecasting and ordering and allows them to get into the granular detail of how different stock lines are performing across their stores.

Henri Bell who manages the chilled section at PAKn'SAVE Westgate says the insights from the system are a wealth of valuable information and materially inform his buying decisions. "The system shows me clearly what items are regularly needing to be discounted. This tells me we are either ordering too much, not ranging or pricing them correctly. Equally with products that are never discounted, we can consider if we are ordering enough – does it mean we are selling out too quickly or are our stock levels, pricing and position in the store optimal."

Sandy Botterill, Head of Environmental Social Governance at Foodstuffs says the system is well aligned with the co-operative's commitment to sustainability within their operations and reducing food being diverted from stores.



What I love about a tool like this is that it is delivering results across all key indicators for a business – it's saving time and money, reducing waste and improving sustainability. Its helping deliver quality and value to our customers – it's winning on every front.

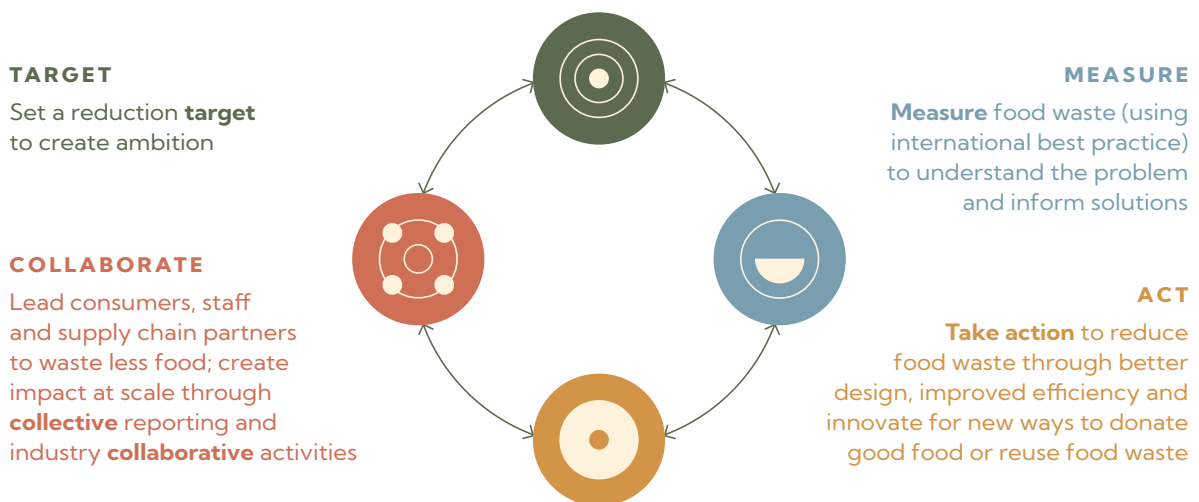
"This initiative is part of a suite of things we're working on as part of our involvement in Kai Commitment and wider ESG programme to reduce waste and ensure food feeds New Zealand communities not landfills."



How this initiative aligns with the Target Measure Act Framework

The Kai Commitment programme is centered around the Target Measure Act Framework (Figure 1), which is recognised as one of the most effective ways for governments and industry to reduce food waste and is widely used by large food sector businesses in the US, Europe, UK and Australia. The Foodstuffs use of the WhyWaste system is well aligned with this framework.

Figure 1: Target Measure Act Framework





TARGET

Foodstuffs has a goal of zero edible food waste to landfill by 2027. The WhyWaste system helps prevent food waste from going to landfill by ensuring it can be sold or donated and also provides analytics to identify waste hotspots.



MEASURE

This system provides invaluable data to individual stores, showing which products are selling well and which may be more prone to going to waste. This information helps stores to track progress against both their own and organisational targets, while also enabling them to make data-informed buying and stocking decisions.



ACT

The WhyWaste system informs actions to reduce food waste in the Foodstuffs stores using the system. Owner-operators and managers can make buying, ranging and stock rotation decisions that minimise food waste. Many of the stores using WhyWaste use the information to create a culture of food waste minimisation within their store.



COLLABORATE

This initiative facilitates collaboration between departments within stores enabling them to identify upcycling opportunities. For example, dairy products nearing expiry can be used in the in-store bakery.



Kai Commitment



**NZ FOOD WASTE
CHAMPIONS 12.3**