

# Optimizing Packaging Recyclability and Life Cycle of Plastic Containers

## CASE STUDY



### CUSTOMER PROFILE

This customer is one of the world's leading providers of natural bottled water, with numerous business locations worldwide. The company makes 5-gallon water jugs with plastic packaging that can be reused multiple times when customers bring the jugs back to the store and exchange them for a full one.

### CONTEXT

With so many packaging options for water consumption all over the world, the global plastic crisis is now putting pressure on water companies to focus on recyclability instead of single-use plastic containers. Water demand has also increased sharply, especially in parts of the world where safe drinking water is unavailable.

### CUSTOMER CHALLENGES

This particular company wanted to optimize packaging recyclability for 5-gallon water jugs. Since it is difficult to determine how many times each jug has been reused, jugs that are still in good condition are often thrown away for safety purposes, even if the container could be reused a few more times without compromising consumers' safety.

There was also a need to improve the packaging life cycle. Since the jugs are largely distributed, a significant amount of these containers are often damaged or lost during transportation. Furthermore, the cause and location of these occurrences remain unknown.

Ensuring safety is a main concern for this prominent Food & Beverage company, as using a water jug too many times can greatly affect consumers' health due to presence of plastic fragments that can arise over time.

### GOALS

- Contribute to the company's circular economy objectives by increasing the recyclability of 5-gallon jugs and optimizing the packaging life cycle
- Gain visibility on the water jug distribution supply chain and returns
- Decrease purchase-related annual costs
- Optimize overall business operations

### SPECIAL REQUIREMENTS

- Marking technology has to be damage-proof
- Scalability options
- Solution must be able to process 5-gallon jugs already on the market
- Need reporting and dashboards to ensure supply-chain mapping



## SOLUTION

OPTEL's scalable solutions provided precise, unit-level traceability on the customer's 5-gallon water jugs:

- Each jug is assigned a Unique Identifier (UID) engraved in the plastic material.
- During the manufacturing process, OPTEL's cloud-based software can decode the UID and gather data on each jug, providing real-time visibility on all filling plants.
- Aggregation from jug to rack was also implemented to thoroughly follow each item.

## RESULTS

The customer now knows how many times each 5-gallon water jug is being used and has optimized its packaging recyclability. Plastic waste and purchase costs for new jugs have also been reduced, without compromising safety standards.

Actionable data is now available for further bottle authentication at every step of the supply chain, up to the final consumer.

The next step is integrating a collaborative platform for the final consumer to authenticate its water jugs, mitigating fraud and illegal production.

## CONTACT US

For more information, visit:  
[www.optelgroup.com/food-and-beverage/](http://www.optelgroup.com/food-and-beverage/)

OPTEL's **traceability solutions** ensure full packaging **recyclability** and offer **supply chain insights**, benefiting both companies and consumers.



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