

## Case Studies

# Combating the Global Plastic Packaging Waste Problem in the Grocery Sector: A Case Study of Publix Supermarkets

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This case study analyzes the global problem of plastic packaging waste through the lens of U.S. supermarket chain Publix. Although Publix has an active corporate social responsibility program and well-documented sustainability practices, its efforts to date on reducing plastic waste have been limited, particularly in comparison to European grocery chains. The case considers steps that Publix might take to reduce plastic waste and meet its obligations to external stakeholders. These steps include everything from eliminating the use of plastic bags to implementing a return and reuse system for plastic bottles and containers.

### Introduction

As Todd Jones reflected on his six-year anniversary as President and CEO of Publix Super Markets, he could not help but feel a sense of deep satisfaction. After all, the 59-year-old Florida native had presided over a period of steady growth and expansion. During his tenure as chief executive, the privately owned, Lakeland, Florida-based company had grown its footprint to nearly 1,300 stores with over 230,000 employees, expanded its online business, and solidified its position as South Florida's leading supermarket chain. Even the COVID-19 pandemic, which had caused havoc for many of Publix's competitors, had not managed to derail the company's growth. Notwithstanding these positive developments, there was reason for unease and much of it centered on the issue of corporate sustainability. Although the company prided itself on its community engagement and green initiatives, it had received criticism for failing to do more. In fact, Greenpeace had just published a ranking of supermarkets on their utilization of single-use plastics and Publix was ranked a lowly 15 out of 20. Jones could not help but wonder whether the venerable grocer with the popular "Greenwise" private label brand of products should be doing more to prove that its sustainability efforts were not merely an exercise in "greenwashing."

### Publix Super Markets

Publix Super Markets was founded in 1930 by George Jenkins Jr., a 27-year-old entrepreneur who got his start in the grocery business several years prior as a clerk at a Georgia Piggly Wiggly store. The Piggly Wiggly group was sold following the economic downturn in 1929 and when the new owner refused to take a meeting with him, Jenkins promptly quit his job and opened the first Publix market directly next door ("The Publix Story," 1980). In the following years, Jenkins went on to create dozens of clean, high-quality

supermarkets with novel features such as air conditioning, frozen food cases, and automatic doors (*History*, n.d.).

Jenkins' commitment to quality and innovation remained a cornerstone of Publix's business long after his death in 1996. As of 2021, Publix was ranked #13 on the Top 100 Retailers List by the National Retail Federation (*Top 100*, n.d.). In addition to \$48 billion in sales, the supermarket chain was consistently won awards for customer service and employee satisfaction (*Awards & Achievements*, n.d.). In May 2016, Todd Jones was named Publix CEO, becoming the first person outside of the Jenkins family to ever lead the company (Arnold, 2018).

### The Global Plastic Problem

The scope of the global plastics problem was staggering. Between the 1950s and 2017, 8.3 billion metric tons of plastic were produced — over double the mass of all animals on Earth (Geyer et al., 2017). Current estimates predicted 1.2 billion metric tons of plastic would be produced in 2050, four times as much as in 2014 (World Economic Forum, 2016). Of the total amount of plastic produced, 6.3 billion metric tons of waste was generated by 2015. Only 9% of this waste was recycled with the vast majority ending up in landfills where it would not break down for hundreds to thousands of years (Geyer et al., 2017).

The growing amount of plastic in the natural environment was also worth noting. In 2016, the equivalent of one garbage truck worth of plastic was leaked into the ocean every minute. This was set to increase to two trucks in 2030 and four in 2050. This trend would result in more plastic than fish in the ocean by 2050 (World Economic Forum, 2016). A key contributor to the plastic waste problem was single-use containers and packaging, including plastic shopping bags, water bottles, cups, and utensils. Five trillion plastic bags were used every year across the world and only 1% of these bags were returned to be recycled (Waste Management Northwest, n.d.). In the U.S. alone, 100 mil-

lion plastic utensils were used every day and were harder to recycle than other types of plastic. Meanwhile, the amount of plastic packaging used worldwide was expected to quadruple by 2050 (World Economic Forum, 2016).

### The Grocery Industry and Plastic Waste

Eunomia, an independent consultancy, estimated that in 2018, top supermarkets were directly responsible for more than half of all household plastic waste in the UK (Laville & Taylor, 2018). The EPA reported that 48.2% of municipal solid waste came from only four materials: paper/paper board, glass, metals, and plastic – precisely the types of packaging commonly found on supermarket shelves (Environmental Protection Agency, n.d.).

Americans spent \$701 billion at supermarkets in 2018 (Lorr, 2021). As such, it seemed that grocery chains like Publix had an ethical responsibility to address the problem of packaging waste – a large percentage of which was plastic.

Supermarkets bought items in bulk from wholesalers and resold them to consumers. Most of these items were food products that required packaging to maintain freshness and quality and prevent damage. Packaging also communicated the brand and name of a product, nutrition facts, and selling points. Disposable packages served a purpose until the food product was consumed, then it became waste. Plastic bags were another form of packaging used almost universally in retail settings. They too are used for a short period of time before being discarded.

When items could no longer be used, they had to go somewhere. If an item could not be recycled, it was either burned, landfilled, or left in nature. The more effectively a material was recycled, the more sustainable an option it became, since less resources were needed in primary production. Plastic was generally regarded as poor packaging option. The thousands of variations of plastic, lack of recycling infrastructure, and complex recycling processes led to 91% of plastic not being recycled (Geyer et al., 2017). Since plastic degraded as it was recycled, most plastic could only be reprocessed once before it was turned into lower-quality products like carpet or fleece, which could not be recycled (*Recycling Plastic*, n.d.). As a result, the small percentage that was recycled would still end up burned or in a landfill when it became waste.

### Publix's Sustainability Efforts

Jones' tenure as Publix CEO came amid increased pressure to pursue Corporate Social Responsibility (CSR) initiatives, especially those that protect the planet. In 2021 Publix published a 91-page sustainability report. Despite seemingly positive news, there was reason to believe that Publix was not living up to its own sustainability standards. As defined by the Environmental Protection Agency, "To pursue sustainability is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations (Environmental Protection Agency, n.d.)."

### Storefront

Through taking annual inventory of greenhouse gases emissions, Publix reduced its carbon dioxide emissions per square foot by 27.7% since 2007. Between 2002 and 2020, electricity consumption in stores was reduced 20%. Publix saved energy in its refrigeration and AC systems by using high-efficiency fan motors and closing refrigerated cases that would otherwise be open. Recycling bins were provided outside of stores. When plastic bags were returned, they were processed at a Publix Return Center into plastic pellets and resold (Publix, 2021). No data is provided on the number of bags returned. Publix reports that in 2020 it recycled 298,801 tons of cardboard, 12,594 tons of mixed plastic, and 2,693 tons of waxed cardboard.

### Grocery

Publix shell eggs would only be from cage free sources by 2026. In 2020, over twenty-seven thousand tons of food waste by-products were repurposed into animal feed. All tuna was sourced from suppliers that abided by International Seafood Sustainability Foundation conservation measures. Produce was sourced from growers that engaged in sustainable practices such as land preservation and water conservation (Publix, 2021). Publix's private label Green-Wise line of products emphasized health and sustainability. Food items must have met one of the following standards: USDA Organic (95% or more certified organic ingredients), 70% or higher organic ingredients, not include specific preservatives, flavors, and colors, be raised without antibiotics or added hormones, and all meats were fed vegetarian diets. The GreenWise brand also included household goods such as paper towels made from 100% recycled fiber and dish detergent derived from plants (Publix, 2021).

### Packaging

Publix made changes to its coffee cups, cutlery, deli bags, wedding cake trays, wine bags, and shipping totes. These adjustments reduced the quantity of packaging necessary by hundreds of thousands of pounds of material. Initiatives were also in place to reduce paper and plastic bags usage. It was "instructing our front-service clerks on proper bagging techniques, setting single-use bag reduction goals for every store, and encouraging use of reusable bags." The strategy for saving even more? "Friendly reminders" to bring reusable bags were placed around stores. While seemingly positive, these statements were quite vague. Publix did not identify what the proper bagging techniques are, nor did it quantify its reduction goals. No data was provided on how many customers used reusable bags; therefore, the efficacy of the friendly reminders could not be verified (Publix, 2021).

Publix claimed to have saved over 7.8 billion plastic bags since 2007. However, this figure was relatively meaningless since the quantity of plastic bags actually used was not disclosed. The reported savings only represented a fictitious decrease from previous projections. A comparison between plastic bag usage in previous years and now could not be made because such data had not been provided. Hence,

there was no evidence that usage of plastic bags had even decreased. Publix had denied request for information.

Additionally, the packaging improvements cited in the sustainability report presented a shocking issue — there was no mention of packaging for products made by manufacturers other than Publix. The report noted changes in the deli, bakery, breakrooms, and storage areas, yet excluded the retail goods from other companies (like bread, milk, cheese, and snacks) that occupied most of the store. If products like Tropicana orange juice or Häagen-Dazs ice cream were made by other companies, was there any way for Publix to sell them with sustainable packaging? A new solution now made this possible.

### Loop US

Loop manages packaging that was not designed to be thrown out when the item is finished. It developed a platform where a customer selected the items they wanted, paid a deposit for the packaging, then got refunded when the package was returned to an in-store drop-off bin. For example, a bottle of Coca-Cola would require a deposit of 15 cents or \$10 for a container of Clorox Wipes. There was no extra cost to customers for this program since they were only paying for the materials inside the packaging. Loop CEO, Tom Szaky, reported that within 60 days of purchase 80% of the packaging is returned. Loop charged fees to their corporate partners to fund their operations. Many big names signed onto this concept including Tide, Hidden Valley, Tropicana, Pantene, Crest, and Febreze. The ultimate goal for Loop was to implement a sustainable method of shopping everywhere (Durbin, 2021).

### Loop's Environmental Impact

A Life Cycle Assessment of the environmental impacts of operating the Loop platform verified the significant improvement over the traditional buy-and-throw-out model. The accuracy of this data was confirmed by an independent third-party consultant. The assessment found that the Loop packaging produced higher initial emissions, but quickly outperformed traditional packaging (at around three uses) and continued to decrease with more uses. When cleaning and transportation were considered, Loop still showed a 45% reduction in CO<sub>2</sub> emissions when compared with single-use packaging. Furthermore, the bottles used for packaging already contained recycled content, and when they were too damaged for operation, they were recycled again. When determining the environmental impact of packaging, the energy used to create and manage the packages and the effects of the waste created should be considered.

### Successful Implementations

In 2020, the Loop platform was implemented by French retailer Carrefour. Products such as Nivea lotion, Danone milk, Evian bottled water, Puget olive oil, Nutella spread, Chocapic cereal, Ricoré instant coffee, and Maison Verte laundry detergent were available in the returnable packaging. Carrefour was working to expand their reusable lineup to over 100 hundred products, while also adding the platform to more stores. Carrefour set the ambitious goal of

adding reusable packaging to 500 stores and offering 1,000 products with reusable packaging by the end of 2025 (Carrefour, 2021). In 2021, Loop products were made available at 19 Aeon stores in Japan, a partnership supported by the Tokyo Metropolitan Government (Joe, 2021). In September 2021, ten Tesco stores in the UK offered 88 products on the Loop platform which included local favorites like Tetley tea and BrewDog Beer. Also included were 35 Tesco own-brand pantry staples like pasta and rice (Munford, 2021).

Loop originally launched as an e-commerce platform in several mid-Atlantic states in May 2019, where products were delivered and picked up. Within months, Loop expanded to 48 states across America. Loop was currently scheduled to launch in early 2022 in 25 Fred Meyer (a supermarket owned by Kroger) locations around Portland, Oregon and select Walgreens locations in the New York metro area. In total, 191 stores and restaurants across the globe would sell their products in this reusable packaging by early 2022 (Durbin, 2021).

### Other Sustainability Options

While adopting the Loop system was one possible avenue for Publix, there were other options available to reduce plastic waste. Whole Foods, for example, had implemented 'bulk bins' that allowed customers to purchase varying amounts of product and reuse the containers they filled. Supermarkets could also have changed their own-brand product packaging to not include plastic or design them with the plethora of biodegradable options available such as bamboo, sugarcane, and wheat straw fibers. Retailers could have persuaded manufacturers to improve by paying more for sustainable packaging or avoiding the purchase of products with harder-to-recycle packaging.

An aggressive approach would entail partnering with governments and other stores to implement a large-scale package collection program. The German *pfand* system, which required a refundable deposit on all drink bottles sold across the country, was a comparable example that had proven effective. Under the system, 98% of beverage containers were returned (Ruiz & Cwienk, 2021). This would produce sweeping results across a county or state and avoid the complication of policies from multiple stores.

### Progress from Other Retailers

As Jenkins considered his options, he could look to successful initiatives undertaken by other supermarket chains both at home and in Europe.

Carrefour, for instance, had implemented a plan in 2019 to phase out plastic packaging in France by 2025. The plan included steps such as replacing polystyrene with cardboard, removing plastic straws from shelves, and using elastic bands on produce like bananas and cucumbers instead of plastic pouches. To promote reuse, Carrefour allowed customers to bring their own containers to buy fish, meat, cheese, and pastries, while reusable cotton bags could be purchased for fruits and vegetables (Carrefour, 2019).

In December 2020, British grocer Tesco announced that one billion pieces of plastic were removed from its UK operations as part of its mission to "...assesses every piece of packaging and removes all unnecessary and non-recyclable

material.” Tesco informed 1,500 suppliers that “...packaging will form a key part of its decision-making process which determines what products are sold in stores.” In a bold approach, they stressed that Tesco “... reserves the right to no longer stock products that use excessive packaging or hard to recycle materials (*Tesco Removes*, 2020).”

Giant Eagle, a north-eastern supermarket chain with nearly 500 stores, committed to eliminating all single-use plastics from its operations by 2025 and achieving net zero carbon emissions by 2040. The company worked with its partners to create biodegradable packaging options such as six-pack beer rings made from spent grain from brewing, compostable coffee pods, and meal kits packaged with recycled paper (*Sustainability at Giant Eagle*, n.d.).

Whole Foods Market became the first U.S. grocer to use 100% recycled paper bags in 2007 and ban single-use plastic bags in 2008. In 2019, it eliminated plastic drinking straws, reduced plastic in rotisserie-chicken containers by 70%, and implemented smaller produce bags. Compostable salad boxes are available in the prepared food department. All Styrofoam meat packaging trays had been eliminated (*Plastics and Packaging*, n.d.).

In January 2020, Wegmans phased out plastic bags and began to charge for paper bags. They then donated this money to local food banks (*Wegmans*, 2020). Similarly, Aldi and wholesale clubs like Costco and BJ’s had never offered plastic bags for free.

## Regulation

To address the plastic waste problem, some governments begun to regulate single-use plastic. In 2012, plastic bags were banned completely and a minimum ten-cent charge for paper bags was implemented for stores in San Jose, California. Following the ordinance, 69% fewer disposable plastic bags were present in storm drain inlets, businesses saw a 94% reduction in the average use of plastic bags, and a 44% increase in reusable bag usage was recorded (*Bring Your*, n.d.).

In February 2016, the City of Coral Gables voted to ban polystyrene (commonly known as Styrofoam). In July 2016, the Florida Retail Federation sued the city over the ban. The

ban was supported, then later reversed by the Third District Court of Appeals in August 2019. As a result, the municipal governments of Miami Beach, Surfside, Palm Beach, Gainesville, and Alachua County repealed or delayed their bans on plastic bags and containers (*Plastic Bag*, n.d.). The Florida Retail Federation reported a total of \$431,291 donations in 2017, \$350,000 (or 81.2%) of which was donated by Publix (Wolf, 2018).

## The Dilemma

Todd Jones considered his options. Publix had already undertaken bold steps to reduce its carbon footprint, electricity consumption, and food waste. Could it continue to pass the buck on plastic waste? As a formidable force in Florida’s economy, Publix had the power to serve as a catalyst for change. By implementing a county or statewide program like the German *pfand* system, Publix could largely eliminate waste in segments like drink bottles. Pioneering this transition would be costly and time-intensive, yet it would also solidify Publix’s goodwill with the communities it served and place Publix among the top sustainable grocers in the U.S. Setting up a return and reuse system was another option. Although appealing, it would require significant training, investment, and in-store space. Moreover, such a system might complicate the shopping experience and drive away customers. A less complicated option might be to eliminate disposable plastic bags, as some other grocers had done. It might even take the further step of charging a small fee for paper bags to incentivize shoppers to opt for reusable bags. Yet another option might be to change all Publix-branded products to biodegradable packaging. All of these options involved significant tradeoffs and Jones couldn’t help but wonder whether the company’s customers would tolerate higher prices and less convenience in order to help save the planet.

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