

Title: Plastic Free

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Background & Significance

Our consumptive preferences over the last century have been driven by the invention and adoption of plastics which has led to tremendous impacts on the environment. By 2050, there will be more plastic than fish in our oceans¹, and as of 2018, 90.5% of plastic have never been recycled². Plastic, when not disposed of properly, can enter the natural environment and never go away. It photodegrades through extended sun exposure, breaking down into smaller pieces called microplastics. Microplastics collect and harbor toxic chemicals that accumulate in the environment, and have been found in public water, human food sources, and causes harm to ecosystems.³

A substantial increase of plastic pollution in the natural environment is the product of increased plastic production. The total natural capital cost of plastic use by the food sector is 23% of the total natural capital cost of the consumer goods industry.⁴ With the recent enactment of the National Sword policy in China⁵, banning plastic waste from being imported, recycling plastics on the West Coast has become even more difficult, only compounding a growing plastic waste problem.

The grocery and natural food industry host many issues with plastic packaging, but there is increasing demand for low- and zero-waste purchasing options, as shown by Unilever and Terracycle entering the grocery delivery market with a new service called Loop⁶, which delivers grocery products in reusable packaging. There has also been a trend toward food sustainability, with an emphasis on sourcing locally in restaurants, farmers' markets, and grocery stores.⁷ While locally grown foods are not necessarily healthier, the reduced emissions that come from local sourcing is more sustainable, and consumers are comforted knowing the source of their food items.⁷ Fresh produce made up 35% of U.S. Retail Sales of Natural and Organic Foods and Beverages.⁸ The Organic Trade Association's reports that U.S. sales of organic food reached \$26.7 billion in 2010.^{8m} Natural and organic foods are becoming more widely available; however, most foods are still packaged in some type of plastic: film, hard containers, or Styrofoam. Some customers may desire a low- to zero-waste lifestyle, but are faced with the recurring packaging problem.

The U.S. is still in the process of introducing low-waste grocery stores. Current low-waste or zero-waste stores include: NADA Grocery in Vancouver; The Wally Shop in Brooklyn; Package Free Shop in Brooklyn; Granel in Spain; and Original Unverpackt in Berlin.⁹ As more people spend time at the workplace, for an average of 7.6 hours per work day⁷, living a low waste lifestyle is only becoming more inconvenient for the average working professional. We believe that Unilever's products are not the same healthy, organic, farm fresh products the customers our service is looking to target want. Our business idea seeks to make low-waste, farm fresh grocery shopping accessible and affordable to the everyday business professional.

Eco- E Opportunity:

It is clear reuse needs to factor more into our everyday consumer practice, and we believe that establishing a strong reuse practice in the grocery industry could significantly reduce the amount of single use plastics used and disposed of. Currently, traditional grocery stores offer minimal options for individuals to buy their groceries without plastic packaging, making adoption of a low waste lifestyle complicated, as aisles are lined with food items wrapped in disposable packaging. Many individuals seeking to reduce their personal use of single use packaging are limited in their options of where they can shop for food items and what they can buy. Shoppers looking to buy bulk items in larger grocery chains are restricted from bringing their own containers, only making their intentions of low waste purchasing more difficult. From our eighteen customer interviews conducted, we found that a majority of customers interviewed think about sustainability when shopping for groceries, but their decisions are focused on price and convenience. While almost all customers surveyed bring their own bags to the grocery store, very few shop in the bulk aisle with reusable containers, due to the inconvenience. Conversely, of the customers that had used a grocery delivery service, many said they were satisfied by the convenience, but dissatisfied by the excess packaging; as each individual produce item ordered was separately wrapped in plastic and customers were not able to provide their own bags (as they would at the store). Additionally, we found that the customers we

interviewed liked shopping at the farmers market, but found that the markets were not as accessible to them due to limited hours.

Farmers markets cradle a low waste lifestyle, allowing customers to shop for food items directly from the supplier. They also provide more organic options, as well as a community feel that we found our customers to find appealing. But farmers markets are not accessible to all community members due to high prices and limited hours. Individuals who have kids or who work long hours, may not be able to shop at farmers markets. Some of the customers we interviewed even urged us to explore a community buying method, so as to potentially cut down on food costs through bulk buying from suppliers. This is an idea we decided to explore further, eventually zeroing in on office communities.

Our concept seeks to make low-waste, farm fresh grocery shopping accessible and affordable to everyday business professionals. We would like to target our delivery service to businesses and shared workspaces that would like to provide employees with the perk of grocery delivery. For example, large corporate campuses such as Google provide their employees with everything they need to increase productivity and keep their employees at the offices. By delivering groceries straight to campuses like Google's, we add to their productivity by making low-waste groceries accessible and convenient. We also gain multiple customers from one location, versus one customer per different location, reducing carbon emissions from delivery, as well as reduced logistics costs and complexity. Employees will be able to buy farmers market fresh grocery items in bulk for a discounted cost, and their groceries will be delivered to their office on a designated day of the week to make wholesome eating more convenient for them. All packaging will be reusable and will be returned to their office for the next delivery.

By delivering to the workplace, we are making low waste grocery shopping easier for the everyday professional, we are cutting down on greenhouse gases¹⁰, and are providing wholesome food at a lower cost to our customers. The idea is scalable through office size and location, as well as through other types of institutions that are ideal for a group buying structure (for example, retirement communities and schools). We are also considering the option of creating an app through which employees can order their groceries. This app will provide content like recipes and low waste lifestyle tips, creating an online community space for the customer to feel engaged in and educated about living low waste.

The delivery service would yield environmental and health benefits by providing working individuals with delivered fresh, local groceries in re-usable packaging. This model has the potential to increase productivity, healthy eating, and decrease the often time-stressed activity of grocery shopping.

Objectives:

The objective of Plastic Free is to assess the environmental benefit of switching from a single use buying model to one that is based in reuse, as pertaining to grocery packaging. To do this, we have identified three different research topics we would like to pursue during the course of the project.

1.) Is reusable grocery packaging better for the environment?

We would like to study the environmental impacts of both single use and reusable grocery packaging to determine if reusable packaging is in fact more environmentally friendly. While plastics do not break down in to organic material and are causing significant pollution in global waterways, reusable items like cotton bags can be energy and resource intensive. We plan on looking at the cost benefit analysis of several potential packaging options to determine which has the lowest impact on the environment and if it can fit within our business model.

2.) Is there an economic benefit to the consumer-packaged goods industry to reduce plastic packaging?

With mounting scientific evidence documenting large quantities of plastic waste in global waterways and oceans, why do the majority of grocery customers still buy their grocery items in single use packaging? We want to study the economic benefits of single use packaging vs. reusable packaging to determine if there is an economic benefit in switching to a reusable model, and what would be the best way for the consumer-packaged goods industry to capitalize on that benefit.

3.) What kind of business model can help drive customer adoption of reusable grocery packaging?

With more than 1 million tons of plastic waste per year coming from supermarkets in the UK alone¹¹, it is clear that single use plastic packaging in the grocery industry is a problem that is not being accurately addressed. We would like to look at the current shopping experience for customers to analyze why a reusable shopping model is not widely followed and develop a business model around making a zero-waste lifestyle more accessible to the general public.

Available data:

First, it will be necessary to access publicly available data through scientific journals and news and media outlets that report on more recent activity to find solutions connecting the plastic problem and the grocery delivery service industry. To do this we will analyze available data on the plastic waste stream to determine if there is a significant relationship between plastic pollution and the use of single use packaging in the grocery industry. We will gather industry and market research on the consumer-packaged goods industry, general grocery industry and grocery delivery market. We will examine data surrounding reusable packing, the amount of plastic that goes into the grocery industry, the amount of energy required for grocery packaging, delivery, and supply chain, and comparing the energy input for reusable packaging materials like glass, metal, cloth, and plastic to determine which ones are the most resource efficient in terms of water, energy, and land-use. Our focus will also touch on comparing life cycle assessment of reusable packaging with the plastic packaging currently on the market to determine how many uses of the reusable options will offset the plastic options, as well as assessing eventual end of life procedure (once packaging is damaged or no longer usable) to determine what material is most ideal for recycling. Additionally, we will look at what companies have done and are doing with reusable packaging and we will research what methods are the most effective.

Possible Approaches:

Since our business model is centered on delivering to corporate locations, we plan on interviewing offices and their employees to determine what their pain points are, what are must haves for our service, and what are their “like to haves.” We have already been fortunate enough to begin doing this research with Toad & Co., and have been able to interview both their HR department to gain insight into their vendor policies and employee benefits program, as well as some of their employees. After we determine our target market, we would like to identify a local business that would be willing to work with us on a pilot delivery program.

To determine our exact target market, we will research and survey offices that fall within various employee count categories (1 -100 employees, 100 - 1000 employees, 1000 employees and up). Additionally, we plan to research interest in offices that work in specific industries. For example, would medium sized (100 – 1000 employees) companies working in the tech industry be more or less interested in our service than medium sized companies working in the outdoor industry. Since our business model is likely to serve two separate customers (the company and the individual employee) understanding the pain points and needs of both types of customer will be important. We will interview HR representatives, who handle implementation of new employee perk programs, as well as employees working in the same company, to determine the right company culture fit to zero in on our target customer. Finally, we have also decided to interview retirement communities to see if residents have interest in a zero-waste grocery delivery service, as we could utilize the same single drop off/ bulk buy model.

In tandem with interviewing offices, we have also started interviewing potential suppliers, and recently spoke with local farmers at the Montecito farmers market to determine who might be willing to work with us to provide product. We will continue this research locally, as well as nationally, to find the best course of action on delivering low waste grocery product to our customers.

Outreach will be conducted via interviews with people in, but not limited to, the following fields:

1. Grocery industry in general
2. Grocery packaging - comparing different materials metal, glass, plastic, etc.
3. Grocery delivery service industry
4. More sustainable processes for supply chain and production
5. Comparing natural and health food stores, conventional grocery stores, and farmers markets
6. Plastic reduction
7. Farmers, food vendors, and foodservice professionals
8. Human Resources Departments/Office Management
9. Additional Institutions who may benefit from bulk grocery buying (for example retirement communities and churches)

Finally, we have begun researching point of sale programs to determine what might be optimal for running a pilot program of our delivery service. In preliminary research, the platform Shopify could be an option to use. Additionally, we have already begun interviewing industry experts with platform development knowledge at Honey and AppBuddy, who have let us know that a “proof of concept” platform would take around a month to build if we were to do it ourselves.

Supporting Material:

¹The New Plastics Economy, Rethinking the future of plastics. The World Economic Forum. January, 2016.

http://www3.weforum.org/docs/WEF_The_New_Plastics_Economy.pdf

²Geyer, Roland, et al. Production, Use, and Fate of All Plastics Ever Made” Science Advances, vol. 3, no7, 2017.

<http://advances.sciencemag.org/content/3/7/e1700782>

³Kosuth M, Mason SA, Wattenberg EV (2018) Anthropogenic contamination of tap water, beer, and sea salt. PLoS

ONE 13(4): e0194970. <https://doi.org/10.1371/journal.pone.0194970>

⁴UNEP (2014) Valuing Plastics: The Business Case for Measuring, Managing and Disclosing Plastic Use in the Consumer Goods Industry.

⁵California, State of. CA.gov, www.calrecycle.ca.gov/markets/nationalsword.

⁶ “Unilever Innovates Durable, Reusable and Refillable Packaging to Help Eliminate Waste.” *Unilever Global Company Website*, www.unilever.com/news/press-releases/2019/unilever-innovates-durable-reusable-and-refillable-packaging-to-help-eliminate-waste.html.

⁷Miller, R. K., & Washington, K. (2017). *Consumer Behavior 2017-2018: 12th Edition* (Rep.). Loganville, GA:

Richard K. Miller & Associates. ISBN: 9781577832430

⁸Porjes, S. (2011). *Natural and Organic Foods and Beverages in the U.S.: 3rd Edition* (Rep.). New Orleans, LA:

Marigny Research Group. DOI: 1-59814-398-0

⁹Ball, A. L. (2016, March 14). The Anti-Packaging Movement. Retrieved February 10, 2019, from

<https://www.nytimes.com/2016/03/14/t-magazine/food/precycling-food-packaging.html>

¹⁰Shute, N. (2013, May 02). Grocery Home Delivery May be Greener Than Schleppling To The Store. Retrieved from: <https://www.npr.org/sections/thesalt/2013/05/01/180330444/grocery-home-delivery-may-be-greener-than-schlepping-to-the-store>

¹¹ Laville, Sandra, and Matthew Taylor. “Nearly 1m Tonnes Every Year: Supermarkets Shamed for Plastic Packaging.” *The Guardian*, Guardian News and Media, 17 Jan. 2018,

www.theguardian.com/environment/2018/jan/17/nearly-1m-tonnes-every-year-supermarkets-shamed-for-plastic-packaging.

List of Industry Expert Interviews:

1. Meyers, Laurel. Former Senior Director for Product Development and Innovation at the Honest Company. In-person interview by Lauren Jack. Los Angeles, CA, November 9, 2018.
2. Clark, Taylor. Co-Founder at Irregular Labs. Phone interview by Lauren Jack. Los Angeles, CA, November 11, 2018.
3. Young, Doug. Lead Data Engineer, Honey. Phone interview by Lauren Jack. Los Angeles, CA, November 25, 2018.
4. Michalski, Evan. Vice President of Customer Engagement, AppBuddy. Phone interview by Lauren Jack. Santa Barbara, CA, November 26, 2018.
5. Rossbacher, Lulu. Former Training Specialist, Community Operations, Instacart. Phone interview by Lauren Jack. Santa Barbara, CA, November 26, 2018.
6. Veldman, Laura. Sustainability Manager at WestRock Company. Phone Interview by Lauren Jack. Santa Barbara, CA, December 6, 2019.
7. Etling, Ashley. Founder at Limeloop. Phone interview by Lauren Jack and Jill Wirt. Santa Barbara, CA, January 10, 2019.
8. Palladino, Sarah. Office Manager, Culture and Communications, Toad & Co. Phone Interview by Lauren Jack, Jill Wirt and Isabelle Radis. Santa Barbara, CA, February 6, 2019.
9. Milazzo, Kelly. VP of Operations, Toad & Co. Phone Interview by Lauren Jack. Santa Barbara, CA, February 11, 2019.
10. Gorius, Chad. Executive Sous-Chef at SpaceX. Phone interview by Lauren Jack. Santa Barbara, CA, February 12, 2019.
11. Lilies Farm Eggs, In-person interview by Joslyn Fritz, Jill Wirt and Isabelle Radis. Montecito, CA, February 8th, 2019.

12. Nojoqui Farm, In-person interview by Joslyn Fritz, Jill Wirt and Isabelle Radis. Montecito, CA, February 8th, 2019.
13. Chewy Berry farm, In-person interview by Joslyn Fritz, Jill Wirt and Isabelle Radis. Montecito, CA, February 8th, 2019.
14. Fair Hills Farm, In-person interview by Joslyn Fritz, Jill Wirt and Isabelle Radis. Montecito, CA, February 8th, 2019.
15. Blue Ridge Honey, In-person interview by Joslyn Fritz, Jill Wirt and Isabelle Radis. Montecito, CA, February 8th, 2019.
16. Kim, Eun Yeong. Senior Manager- Total Rewards at SpaceX. Phone Interview by Lauren Jack. Los Angeles, CA, February 15th, 2019
17. Lim, Tamara. CEO The Wally Shop. Phone Interview by Lauren Jack. Los Angeles, CA, February 15th, 2019

List of Customer Interviews:

1. Soto-Espinosa, Alexandria. In-person interview by Joslyn Fritz. Los Angeles, CA, November 4, 2018.
2. Wirt, Janet. In person interview by Jill Wirt, November 24, 2018.
3. Wirt, Jennifer. In person interview by Jill Wirt, November 24, 2018.
4. Lang, Cody. In person interview by Jill Wirt, November 24, 2018.
5. Dutton, Jon. In person interview by Jill Wirt, November 24, 2018.
6. Jack, Francine. Phone interview by Lauren Jack. Los Angeles, CA, November 24, 2018.
7. Turner, Kathryn. In person interview by Lauren Jack. Los Angeles, CA, November 24, 2018.
8. Davis, Tracie. Phone interview by Lauren Jack. Los Angeles, CA, November 24, 2018.
9. Davis, Susan. Phone interview by Lauren Jack. Los Angeles, CA, November 24, 2018.
10. King, Charlotte. In person interview by Lauren Jack. Los Angeles, CA, November 25, 2018.
11. Szafranski, Lindsay. In person interview by Lauren Jack. Los Angeles, CA, November 25, 2018.
12. Mottram, Johanna. Phone interview by Joslyn Fritz. November 25, 2018.
13. Bui, Scott. Online interview by Tyanna Bui, November 24, 2018.
14. Vue, Pachia. Online interview by Tyanna Bui, November 24, 2018.
15. Bui, Elsa. Online interview by Tyanna Bui, November 23, 2018.
16. Taylor, Jacqueline. Online interview by Joslyn Fritz. November 23, 2018.
17. Wehrkamp, Lucinda. Phone Interview by Lauren Jack. Santa Barbara, CA, February 7, 2019.
18. Grebel, Kira. Phone Interview by Lauren Jack. Santa Barbara, CA, February 13, 2019.