

# BUSINESS PLAN

Turn Waste into Value



**SURE WE CAN**  
WHERE EVERYONE COUNTS

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# 01 // ACKNOWLEDGEMENTS

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Figure 1: Entrance to *Sure We Can*'s Lot

Source: *Sure We Can*, 2016<sup>1</sup>

## THE TEAM

Greta Golz  
Ana Espinosa  
Vérane Gross  
Cyle Timmons  
Hiliary Osborn  
Meagan Arceo  
Emily Gittleman  
Debasmita Sarkar  
Melissa Kaslowski

# 02 // EXECUTIVE SUMMARY

## SURE WE CAN

*Sure We Can* is a nonprofit recycling center, community space, and sustainability hub in Brooklyn, New York. Since 2007, this space has enabled nearly **500 canners** - people who collect cans and bottles from the streets for returns - to make a living.<sup>2</sup> Throughout the years, *Sure We Can* has evolved into a community center where canners come together with students and neighbors through various other initiatives, such as composting, gardening, and the arts. The organization has a triple impact mission, focused on promoting social **inclusion**, environmental **awareness**, and economic **empowerment**. This mission aims to support the local community, while promoting the circular economy by diverting waste from entering landfills.



Figure 2: *Sure We Can* Canners at Work

Source: *Sure We Can*, 2017<sup>3</sup>

## OBJECTIVE

*Sure We Can* engaged the capstone team to explore the feasibility of adding a new branch to its organization. The aim is to create a social enterprise that provides its female canners with additional opportunities to diversify their livelihoods. Specifically, *Sure We Can* is interested in opportunities that allow canners to create new products out of discarded **bottle caps**, **plastic bags**, or **textiles**. Furthermore, the new initiative needs to meet a set of social, environmental, and economic goals. To help realize *Sure We Can*'s vision, the capstone team developed the following report as a business plan, which provides recommendations for the creation of a suitable social enterprise, including:

- A market analysis of companies that upcycle waste into products;
- An evaluation of upcycled products, leading to two product recommendations;
- Product, operations and marketing plans;
- A financial analysis tool;
- A triple impact assessment tool; and
- An implementation plan for launching the enterprise.

# RECOMMENDATION

To create a feasible social enterprise proposition for *Sure We Can*, the capstone team established a product selection framework. The framework evaluates a range of upcycled products based on a set of feasibility criteria and engages potential customers on their desirability. Through these processes, the team identified the two most suitable products for *Sure We Can* to pursue. The top recommendation is for *Sure We Can* to create **wastebaskets** made from bottle caps (*Figure 3*). As an alternative, the organization could also produce multi-purpose **bowls** made from plastic bags (*Figure 4*).

## BOTTLE CAP WASTEBASKET



*Figure 3: Product Recommendations*  
Source: Popular Science, 2017<sup>4</sup>

The wastebasket serves as a top recommendation for several reasons. Not only is the product most feasible according to the framework, it is also deemed most desirable by potential customers and creates the greatest synergies with *Sure We Can*'s current operations. Notably, canners already collect a reliable supply of bottle caps. The product itself also provides a meaningful story as it exemplifies a waste-to-waste disposal model. Last, there are few competitors creating similar products. The main drawback of this product is the upfront capital required to invest in or build machinery that melts and molds bottle caps. However, potential providers of seed capital have been identified.

## PLASTIC BAGS BOWL



*Figure 4: Product Recommendations*  
Source: Johnson, 2017<sup>5</sup>

The alternative product recommendation is a multi-purpose bowl, crocheted using yarn made from discarded plastic bags. The product was also considered desirable by customers and uses simple production processes that utilize certain canners' existing skills. The main disadvantages of this product include *Sure We Can*'s restricted access to a constant supply of plastic bags, the large number of competitors already creating similar products, and the comparatively more labor-intensive nature of its production processes.

# FINANCIALS

The team created a financial model to evaluate the feasibility of creating the two recommended products. The model can be used to make key decisions for the social enterprise, including production volumes and product pricing. *Figure 5* summarizes key financial metrics for both products. These metrics are based on a five-year time horizon, overhead of 15%, initial production volumes of ten units per month, growth of 10%, and marketing costs of \$12.50 per month. The wastebasket scenario assumes that *Sure We Can* receives a grant of \$2,000, due to the higher initial capital needed to acquire the machinery. However, the bowl scenario does not include external funding. Provided that external funding can be secured, the financial analysis suggests *Sure We Can* should prioritize producing wastebaskets. If the organization cannot secure funding, producing the wastebasket will be more difficult. Therefore, the bowl could be considered as an alternative option.

	Recommended Price	Initial Capital Needed	Positive Cash Flow	Net Present Value
Bottle Caps Wastebasket	\$35	\$1,608	7 months	\$90,401
Plastic Bag Bowl	\$33	\$48	21 months	\$49,545

Figure 5: Financial Summary of Product Recommendations

# IMPACT

To measure and monitor the enterprise’s success in achieving its social, environmental, and economic goals, the team created an impact dashboard. *Figure 6* provides an overview of the metrics used to evaluate this impact, otherwise known as key performance indicators (KPIs). *Sure We Can* can input production and operations data into the tool to receive a visual representation of the relevant KPIs.

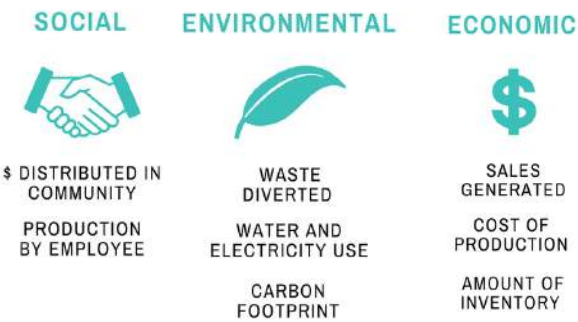


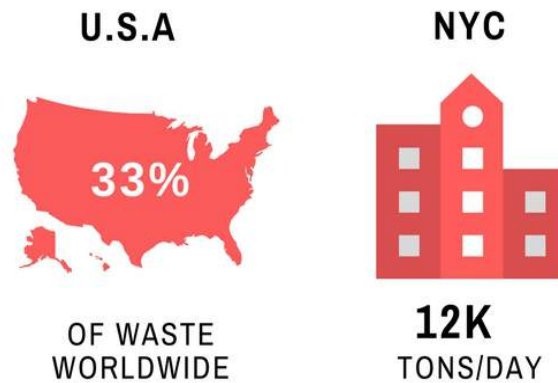
Figure 6: Triple Impact Dashboard Summary



## 03 // INTRODUCTION

### SOLID WASTE

As the global population increases, the volume of waste sent to landfills is growing as well. The U.S. alone produces 33% of total waste worldwide, despite only representing 6% of the world's population.<sup>6</sup> Residential consumers play a significant role in this problem and urban areas are responsible for a large amount of solid waste generation. In fact, the citizens of New York City discard approximately 12,000 tons of trash per day.<sup>7</sup> Currently, only 17% of these discarded materials are recycled.<sup>8</sup> However, New York City aims to send zero waste to landfill by 2030.<sup>9</sup>



*Figure 7: Solid Waste in the U.S.*  
*Source: Grow NYC, 2017<sup>10</sup> and Metro, 2017<sup>11</sup>*

The problem with growing volumes of waste is twofold. First, when an item is sent to landfill it can no longer be utilized. Creating a similar item requires the use of new resources, including energy and water. As a result, more heat-trapping and climate change-inducing greenhouse gases (GHG) are emitted into the atmosphere. Second, landfills are a direct source of GHG emissions. The decomposition process of organic materials in landfills produces natural byproducts, including carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>).<sup>12</sup> In total, landfills account for nearly 36% of annual methane emissions in the U.S.<sup>13</sup> These elevated levels are troubling considering that methane is up to 36 times more effective than carbon dioxide at trapping heat in the atmosphere over 100 years.<sup>14</sup>

There are four main strategies to address solid waste generation: reduce, reuse, recycle, and upcycle. Recycling and upcycling are closely related practices, both of which divert waste from landfills. Recycling in its most basic definition is understood as breaking down a product into its base material using resources, such as energy and water. The resulting raw materials are of lesser value and can be used to create new products. On the other hand, upcycling requires minimal processing. It is defined as the process of using discarded materials to directly create new products of higher value.<sup>15</sup> The upcycling process can be repeated to perpetually delay a material's end of life, thereby limiting the need to use additional resources.<sup>16</sup>

## POVERTY

The United States, and New York City especially, face issues with poverty and income disparity. Over half the income in New York City is earned by 20% of the population, leaving approximately one in ten residents in extreme poverty.<sup>17</sup> Poverty is a complex issue that is comprised of numerous interrelated factors. Elements, such as race and gender, undeniably affect poverty rates (see *Figure 8*). In New York City, income disparities are highly apparent between racial demographics. Since 2010, Latino households have continuously lost income.<sup>18</sup> Today, this demographic earns less than half the income of White households.

**20% OF NEW YORKERS**

**27% OF NON-CITIZENS**

**25% OF HISPANICS**

**23% OF ASIANS**

**21% OF AFRICAN AMERICANS**

**21% OF WOMEN**

*Figure 8: Percent of New Yorkers Living in Poverty. Source: NYC Gov, 2017<sup>19</sup>*

Similarly, African American households earn just 55% of the income earned by White households.<sup>20</sup> While both men and women suffer from poverty, gender discrimination exacerbates poverty issues. The average woman earns approximately 79% of the amount her male counterpart earns.<sup>21</sup> Women also have fewer resources to cope with the additional burdens the gender pay gap creates.

## SURE WE CAN & ITS MISSION

*Sure We Can* is a nonprofit recycling center, community space, and sustainability hub in Brooklyn, New York City. *Sure We Can* allows canners, people who collect cans and bottles from the streets for deposits, to make a living. The organization was founded in 2007, by canners for canners, and has since served a community of almost 500 canners.<sup>22</sup> Today, it also acts as a community center that promotes a sustainable urban culture and facilitates a circular economy. In 2016 alone, *Sure We Can*'s canners collected approximately ten million cans and bottles, preventing them from entering landfills. In the same year, the organization distributed \$500,000 to the community.<sup>23</sup> The organization has a triple impact mission, focused on promoting social inclusion, environmental awareness, and economic empowerment. This mission aims to support the local community, particularly the most vulnerable residents, while diverting waste from entering landfills. *Sure We Can* strives to achieve this mission by bringing canners, students, and neighbors together through five programs: recycling, composting, gardening, education and the arts.

The **recycling** program forms the core of *Sure We Can*'s operations. Canners can bring street-collected bottles and cans to the recycling center and in return receive a \$0.05 deposit per container from *Sure We Can*. This deposit is mandated by the 1983 Bottle Bill.<sup>24</sup> Canners can earn an additional 20% to 25% by sorting cans and bottles by type or brand. Once sorted, distribution companies will pick these up and pay *Sure We Can* a \$0.05 deposit and \$0.035



handling fee per item. The margin between the aggregated \$0.085 per item paid to *Sure We Can* and the amount the organization pays canners, is used to fund *Sure We Can*'s entire operations. Occasionally, grants and donations supplement this income.<sup>25</sup>

Other initiatives include a **composting** program, where *Sure We Can* collects food scraps from local restaurants and processes them into compost. *Sure We Can*'s **gardening** program is focused on maintaining a greenhouse on the organization's lot in Bushwick. To spread awareness about recycling and sustainability, *Sure We Can* also engages in an **education** initiative for students of all ages. Lastly, the organization operates an **arts and crafts** program that invites local artists to create murals on its lot. These murals contribute to making *Sure We Can* an inspiring place to work, as they focus on themes like social inclusion and environmental sustainability.

## CREATING A SOCIAL ENTERPRISE

*Sure We Can* aims to generate opportunities for canners to make an income. In this spirit, the organization is exploring the possibility of creating a social enterprise that would further its current mission to divert waste from landfill, while supporting underserved communities. Building on the organization's expertise in recycling discarded materials, *Sure We Can*'s social enterprise would empower female canners to transform discarded materials into new products of higher value. This report outlines the types of products *Sure We Can* could feasibly create using three types of discarded materials: **bottle caps**, **plastic bags**, and **textiles**.



Figure 9: Canner in *Sure We Can*'s Lot  
Source: *Sure We Can*, 2017<sup>26</sup>

# 04 // METHODOLOGY

## OBJECTIVE

*Sure We Can* engaged the capstone team to explore opportunities to create a social enterprise, which would focus on making consumer products by upcycling discarded materials. The team considered three types of discarded materials: **bottle caps**, **plastic bags**, and **textiles**. The client prioritizes these material types due to their prevalence in waste streams and *Sure We Can*'s ability to access them.



Figure 10: Discarded Materials of Interest



Figure 11: Social Enterprise Goals

The proposed enterprise should meet certain social, environmental, and economic criteria. First, the enterprise should empower *Sure We Can*'s female canners by providing them with additional employment opportunities. Second, the enterprise should create economically viable products that generate new revenue streams for the organization. Third, the enterprise should create environmentally sustainable products that divert waste from landfills. To evaluate the prospect of creating a new enterprise, the capstone team undertook an analysis of the market, feasible products, operational processes, marketing strategies financing, and potential impacts. As requested by *Sure We Can*, the team prioritized the market analysis, product assessment, and financial analysis.

The team's findings are presented in three deliverables, including this business plan, a financial model, and a triple impact dashboard. The **business plan** outlines the team's findings and provides *Sure We Can* with two product recommendations. Furthermore, it presents strategies to build the enterprise and includes an implementation plan. The **financial model** analyzes the product recommendations from a financial perspective and serves as a tool for *Sure We Can* to make financial decisions. The **triple impact dashboard** serves as a tool for the organization to monitor the key performance indicators (KPIs) of the proposed enterprise and evaluate its potential social, environmental, and economic impact.

# METHODOLOGY

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The team developed the project's key deliverables in four phases. The first phase was to **analyze** the relevant market for the social enterprise in order to identify potential competitors within that market. Once a database of competitors was established, the team developed frameworks to facilitate a recommendation of two pursuable products. In light of these product recommendations, the second phase involved the creation of potential product, operations, and marketing **plans** for the social enterprise. The third phase focused on developing tools that enable *Sure We Can* to **assess** the performance of the social enterprise, including a financial model and a triple impact dashboard. The final phase was to provide *Sure We Can* with guidance on how to **implement** the aforementioned plans.



## 1. ANALYZE

**Analyze the market:** Create a competitor selection framework to evaluate the targeted market and identify market opportunities. Establish and analyze key competitors' sourcing, production, and distribution practices to outline best practices for benchmarking.



## 2. PLAN

**Evaluate product options:** Create a product selection framework to evaluate products sold by competitors, as determined by the market analysis, and establish two product recommendations that meet the client's needs.

**Create product plan:** Outline the specifications of both product recommendations, including their benefits, features, value propositions, and pricing.

**Determine operational needs:** Create an operations plan for the two product recommendations that includes information on discarded waste sourcing, production techniques, equipment, and workspace requirements. This includes information on waste management, risks, reverse logistics, distribution methods, and potential partnerships.

**Create marketing strategy:** Create a plan that outlines a suite of marketing practices that *Sure We Can* can employ to scale the enterprise.



## 3. ASSESS

**Conduct financial planning:** Create a financial model, using inputs from the product, operations, and marketing plans. Produce financial statements for each product recommendation. Where needed, this includes information on potential funding opportunities.

**Create impact dashboard:** Create a triple impact dashboard to outline key performance indicators (KPIs) that allow the client to monitor and measure the social, environmental, and economic impact of the enterprise.



## 4. IMPLEMENT

**Outline implementation:** Develop detailed recommendations for the client to launch the proposed initiative. This covers the first six months of implementation.

# 05 // STAKEHOLDERS

Engaging key stakeholders is important in ensuring the creation of a social enterprise that is both meaningful and feasible. As such, the team identified those stakeholders that would strongly impact, or be impacted by, the proposed social enterprise. In addition to *Sure We Can's* management, the team identified the following key stakeholders:

- 1) **Canners** that would participate in the enterprise
- 2) Potential **customers**
- 3) **Retailers** that could potentially carry the products in their stores
- 4) **Other partners** needed to launch and run the enterprise.

Other partners include those that could support the training of canners, the sourcing of discarded materials, the marketing of the product, or the operations and maintenance of the machines. The framework used to identify partnership opportunities can be found in *Appendix A*. *Figure 12* below provides a list of key stakeholders that the capstone team engaged. For a full list of stakeholders that were engaged or considered, see the *Partnerships Toolkit* Excel spreadsheet.

KEY STAKEHOLDERS	
Stakeholder Group	Breakdown
<i>Sure We Can</i> Canners	<ul style="list-style-type: none"> <li>• Josef</li> <li>• Lastenia</li> <li>• Ramona</li> <li>• Maria</li> <li>• Venecia</li> </ul>
Potential Customers	<ul style="list-style-type: none"> <li>• 222 potential customers (sourced from the capstone team's network and a targeted Facebook advertisement)</li> </ul>
Local Retailers	<ul style="list-style-type: none"> <li>• Friends NYC (Vintage clothes and accessories)</li> <li>• Green in Brooklyn (Home goods store)</li> <li>• Exit 9 (Gifts store)</li> </ul>
Other Partners	<ul style="list-style-type: none"> <li>• SheWeld (Equipment)</li> <li>• Brooklyn Metal Works (Equipment)</li> <li>• Dave Marin of Parsons School of Design (Equipment)</li> <li>• Ian Montgomery of Precious Plastic (Equipment/Training)</li> <li>• Brooklyn Craft Company (Training)</li> <li>• Lancelotti Housewares (Retail)</li> </ul>

*Figure 12: List of Key Stakeholders*

## METHODOLOGY

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The team engaged stakeholders through a range of strategies, including online surveys, email exchanges, phone calls, targeted Facebook advertisements, and in-person interviews. The chosen engagement strategy was tailored to each stakeholder group as follows:



Building a personal relationship with and understanding the needs of *Sure We Can*'s female **canners** was crucial in designing an enterprise that aims to empower them. To engage with these women, the team conducted in-person informal interviews, to encourage relationship-building.



Potential **customer** engagement was aimed at understanding their preferences with respect to upcycled products. To reach the largest number of people, the team distributed an online survey through its personal and social media networks, and used a Facebook advertisement to solicit additional responses.



**Retailers** were engaged to determine their interest in carrying the products. A set of questions was developed and used in email exchanges, phone calls, and in-person conversations in retail stores.



**Other partners** were engaged to determine the likelihood of their involvement in launching and running the enterprise. Given the large number of potential partners, the team prioritized phone calls and email exchanges.

## ENGAGEMENT AND INSIGHTS

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### CANNERS

Engagement with the female canners at *Sure We Can* allowed the team to gain valuable insights on how certain products, operational processes, and other factors would align with the organization's expectations as well as the canner's personal needs. The team conducted informal interviews with five female canners selected by *Sure We Can*'s management. Questions were reviewed by the client, prior to conducting the interviews. The interviews were conducted in Spanish - the women's mother tongue - and focused on assessing their skills, interests, and willingness to participate in the social enterprise.

It is important to highlight that the team only engaged with five canners due to the team's Spanish language skills and *Sure We Can*'s desire to launch a social enterprise with this approximate number of women. While the following insights are important to the team's recommendations and operations plan, a wider group of canners may be interested in joining the new enterprise. Should *Sure We Can* decide to pursue this enterprise and integrate other women, the team recommends conducting similar interviews with those women as well. The questionnaire used and responses obtained can be found in *Appendix B*.

The interviews revealed that the women share a close relationship with one another since most are from Latin American countries and speak native Spanish. They also have few family members in New York City, which further strengthens their connection. These factors have created a strong sense of community amongst the women, as well as with other canners at *Sure We Can* who share similar experiences. *Sure We Can* is like a family to many of these canners, which serves as a motivation to visit the center on a daily basis. In fact, all five women voiced interest in the opportunity to further their engagement with one another through new initiatives at *Sure We Can*.

In terms of demographics, the women are between the ages of 45 and 65. Four of the five women do not have children under the age of 15. They suggest this allows for fewer constraints to their availability to work on new projects. These four women unanimously affirmed their willingness to work longer hours at *Sure We Can* to support the development of a new enterprise. Despite age and potential health concerns, all women describe their jobs as canners as a motivation to keep active, social, and productive. The women highlight benefits such as, healthier eating habits, less stress, an escape from boredom, and alleviation of depression. Similarly, the women suggest that winter weather conditions do not dissuade them from working. In fact, most women suggested that while they have the financial capacity to stay home during the winter, they would prefer to participate in an activity that brings them together at *Sure We Can*.

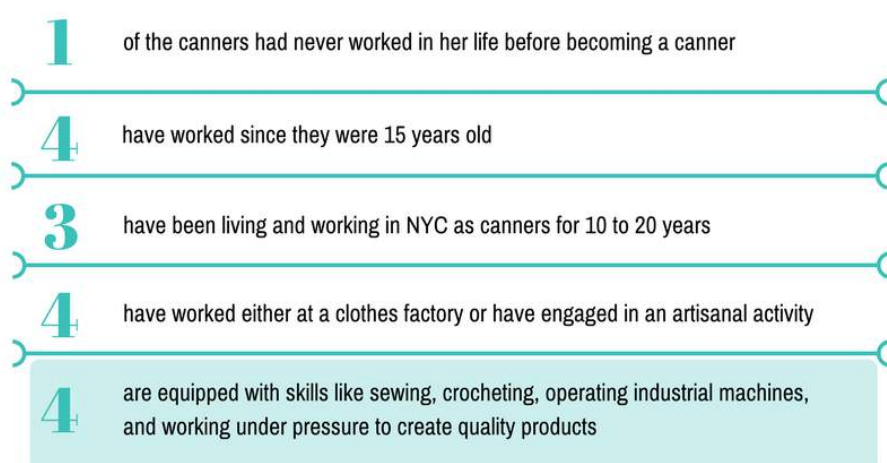


Figure 13: Select Canners' Skills Assessment

## OTHER STAKEHOLDERS

The insights gained from other stakeholder groups are integrated throughout the report and can be found in the following sections:

- Customers: see Section 7 (Product Plan)
- Retailers: see Section 8 (Operations Plan)
- Other partners: see Section 8 (Operations Plan)



# 06 // MARKET ANALYSIS

The market analysis underpins the business plan for the proposed enterprise. The market under consideration is composed of companies that demonstrate a strong focus on creating consumer products out of waste materials. To evaluate the companies in this market and identify key competitors for *Sure We Can*, the team created a competitor selection framework. Key competitors, as determined by the framework, were analyzed according to their sourcing, production, and distribution practices. The first aim of this exercise is to understand current market dynamics and opportunities for *Sure We Can* to enter the market. The second is to outline best practices utilized by competitors. The third is to identify products that the team would subsequently assess in terms of their suitability for *Sure We Can* to produce them.

## MARKET OVERVIEW

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### MARKET PARTICIPANTS

A growing number of companies are interested in upcycling waste into products or using recycled materials to create products. For example, the use of recycled textiles is growing amongst large fashion houses, such as H&M and Patagonia. However, companies that solely focus their collections on upcycled and recycled products remain part of a niche market. Considering *Sure We Can*'s social enterprise would participate in this market, the team limited its analysis to this niche market. This includes companies that use plastic bags, bottle caps, and textiles, as well as other waste materials. The team adopted a global scope of analysis since waste is an issue that people around the world are trying to address in innovative ways.

Using a Competitor Selection Framework (see below), the team identified 34 market participants. Nearly 60% of these participants are located in the U.S. Furthermore, almost 80% of the participants recycle or upcycle one or more of the three discarded materials prioritized by *Sure We Can*. However, few large companies use discarded plastic bags and bottle caps as raw materials. Instead, these companies favor materials like plastic bottles or bicycle inner tubes. In total, large companies with more than 60 employees account for nearly 18% of the identified market, while over 41% of market participants are small and medium-sized enterprises (SMEs). More than two-thirds of these companies have between three and 60 employees. Larger SMEs mostly operate outside of the U.S. For example, in the plastic bags market, two companies are located in Ghana and Cambodia respectively. Companies working with other materials operate in countries, such as Argentina, Finland, and the Netherlands. The remaining 41% of market participants are considered single employee companies of which 86% are individuals that sell products on Etsy, an e-commerce platform.

## PRODUCTION TECHNIQUES

The main production processes in the market include sewing, crocheting, and weaving. Among the 34 competitors, approximately 65% use sewing as the main technique to create their products. Sewing is most commonly used for clothing and quilts in the textile market but is also used in the plastic bag market, such as when plastic is fused and sewn together. Other textile and plastic bag market participants rely on crocheting or weaving. In fact, the majority of textile-based products are crocheted or woven, including rugs, baskets, and bowls. Plastic bag products are often crocheted, using yarn made by stringing together plastic bag strips.<sup>27</sup> Only 21% of market participants make products from bottle caps, which require more intensive production techniques. In fact, more than half of these companies use machinery to heat and compress bottle caps into molds to create products, such as skateboards, lampshades, and toothbrushes. Some require additional equipment to shred the caps before molding.

## MARKET TRENDS

A key trend in the plastic bag market is the creation of vibrant and colorful storage-solution products. This is particularly popular among Etsy sellers. Etsy is an e-commerce website that is dominated by hobby crafters that have perfected the skills needed to crochet or sew plastic bags together to create products, such as baskets and bowls. Some companies use a mix of discarded materials, such as plastic bags and textiles.

In the bottle caps market, a key trend is to melt bottle caps and mold them into new functional items. The bottle cap products tend to be more stylized design products, since the material can be used to create sturdier products. Less crafters are involved in this market due to the more intensive nature of processing bottle caps.

The upcycled textile market mostly focuses on creating apparel and accessories, such as bags out of post-consumer textile waste like t-shirts. However, an increasing number of companies use pre-consumer waste, which allows more flexibility and continuity in product design. This allows for the creation of more standardized and design-forward functional items, such as bowls.

## COMPETITOR SELECTION FRAMEWORK

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To identify key competitors for *Sure We Can*, the team created a competitor selection framework comprised of **basic**, **essential**, and **nonessential** criteria. To define the scope of research, the team solely researched companies that create products from recycled or upcycled materials. To establish a list of companies considered to be key competitors, two additional sets of essential and nonessential criteria were applied.



#### 1. BASIC

**Basic Criteria:** Define the initial set of companies to be researched within the discarded material market. The criteria suggests a company is only considered a competitor if it uses discarded materials in the creation of products. However, it does not limit competitors to those only using plastic bags, bottle caps, or textiles.



#### 2. ESSENTIAL

**Essential Criteria:** Narrow down the larger pool of market participants to key competitors for *Sure We Can's* proposed enterprise. This is based on whether the company's operations are similar to the expected operations of the proposed enterprise.



#### 3. NONESSENTIAL

**Nonessential Criteria:** Establish key competitors that best align with the aim of the proposed social enterprise. The criteria, for example, highlights nonprofit companies with a strong social or environmental mission.

The criteria in *Figures 14 to 16* establish the competitor selection framework. The justification for each criteria can be found in *Appendix C*. The **basic** criteria define the overall market under consideration.

BASIC CRITERIA	
Category	Criterion
Production	<ul style="list-style-type: none"> <li>At least 75% of the company's products are created using upcycled or recycled materials</li> </ul>
Operations	<ul style="list-style-type: none"> <li>Company has an online presence</li> </ul>
Products	<ul style="list-style-type: none"> <li>Company creates and sells consumer products</li> </ul>

*Figure 14: Competitor Selection Basic Criteria*

Once the market was defined according to the basic criteria, **essential** criteria were used to narrow competitors down to those that would directly compete with the social enterprise.

ESSENTIAL CRITERIA	
Category	Criterion
Production	<ul style="list-style-type: none"> <li>Company uses low-tech production techniques (no industrial processes, no assembly line, no use of software)</li> <li>Discarded materials used are plastic bags, bottle caps, or textiles</li> </ul>
Products	<ul style="list-style-type: none"> <li>Maximum retail price of \$300 to ensure an economically sustainable product</li> </ul>
Operations	<ul style="list-style-type: none"> <li>Company has between 3 and 60 employees to ensure it is of comparable size</li> <li>Production is in-house and not outsourced nor contracted to manufacturers</li> </ul>

*Figure 15: Competitor Selection Essential Criteria*

Once competitors were identified using the essential criteria, **nonessential** criteria were used to further assess how closely these would compare with the social enterprise.

NONESSENTIAL CRITERIA	
Category	Criterion
Operations	<ul style="list-style-type: none"> <li>Company is a social enterprise with a strong social and/or environmental mission</li> <li>Company is a nonprofit organization</li> <li>Company is based in the U.S.</li> </ul>
Distribution	<ul style="list-style-type: none"> <li>Company sells products in bulk to retailers that sell the products on their behalf</li> </ul>
Products	<ul style="list-style-type: none"> <li>Company only produces upcycled/recycled products</li> </ul>
Production	<ul style="list-style-type: none"> <li>Company uses production techniques that are simple enough for canners to learn in one month</li> </ul>

Figure 16: Competitor Selection Nonessential Criteria

## COMPETITOR EVALUATION

The **basic** criteria allowed the team to identify 34 competitors. This includes ten companies creating products from plastic bags, seven companies creating products from bottle caps, and nine companies creating products from discarded textiles. The **essential** criteria narrowed these 34 competitors to seven key competitors. Bottle caps and textile companies each represent two of the seven key competitors. The remaining three companies create products from plastic bags. Using the **nonessential** criteria, the team ranked these seven key competitors according to how closely they would compete with the proposed enterprise. This ranking resulted in three tiers of companies, which allowed the team to establish best practices and highlight opportunities for *Sure We Can* to enter the market.

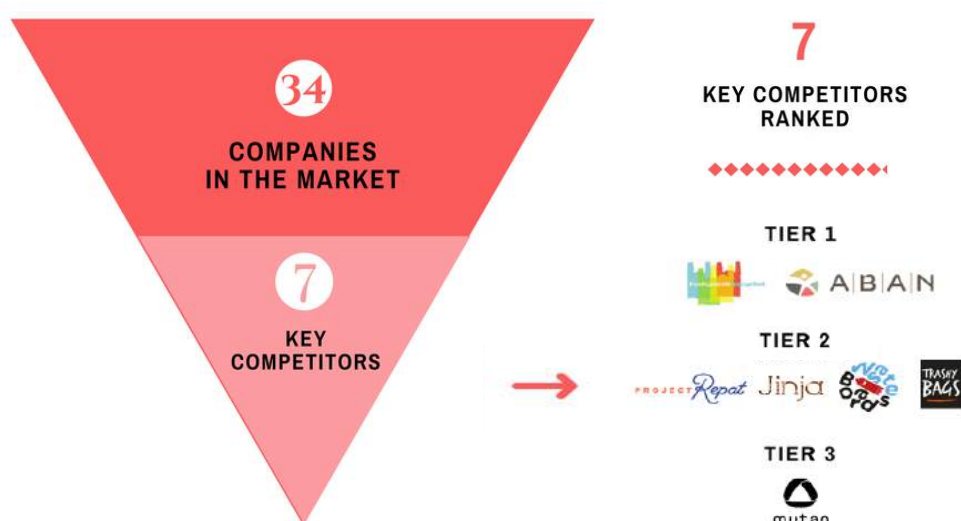


Figure 17: Results of the Competitor Selection Framework

# BEST PRACTICES

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The following section summarizes best practices from the seven key competitors. For details on each of the seven key competitors, see *Appendix D*. The team recommends *Sure We Can* consider these best practices when structuring its own operations.

## SOURCING

- Providing economic incentives for employees to collect the discarded materials on the streets to ensure a constant supply of material.
- Where the internal collection of discarded materials is not feasible, it is best to source materials through partnerships. For example, many competitors source discarded caps and textiles through partnerships with foundations or other organizations.

## PRODUCTION

- Undertaking production processes that make limited use of machinery. For instance, some competitors only use crocheting hooks and standard household items, such as scissors to make their products.
- Where machinery is involved, ensuring that these require limited technical skills to operate. For example, while some competitors use sewing machines and press clickers, the technical skills (sewing and cutting) needed are easily acquirable.

## DISTRIBUTION

- Establishing an online store that is easy to access from the company's website, simple to navigate, and continuously updated. Both an online store on the proprietary website and a link to a third-party online store are effective.
- Providing at least a few customers with the option of physically seeing the product prior to purchase. This is often done through the company's physical stores or showroom. Alternatively, companies showcase their products by partnering with local, national, and international retailers.

## MARKETING

- Using the company's website to explain the organization, its product, and its impact.
- Using social media platforms on a regular basis.
- Using storytelling techniques that highlight the company's social or environmental mission across all marketing channels.

# SWOT ANALYSIS

The team conducted a Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis of *Sure We Can* in the context of the defined market (see *Figure 18*). Strengths and weaknesses identify the positive and negative internal factors that could impact *Sure We Can*'s ability to launch a social enterprise in the market. Opportunities and threats address positive and negative external factors that could impact the social enterprise's ability to enter the market. The SWOT analysis reveals that the market for bottle caps-based products is the least saturated and threatened by hobbyists and companies in emerging markets, who operate with lower labor costs and create depressing prices. This space provides the most opportunities for *Sure We Can* to enter the market. Furthermore, products made from bottle caps would take advantage of *Sure We Can*'s current operational strengths.

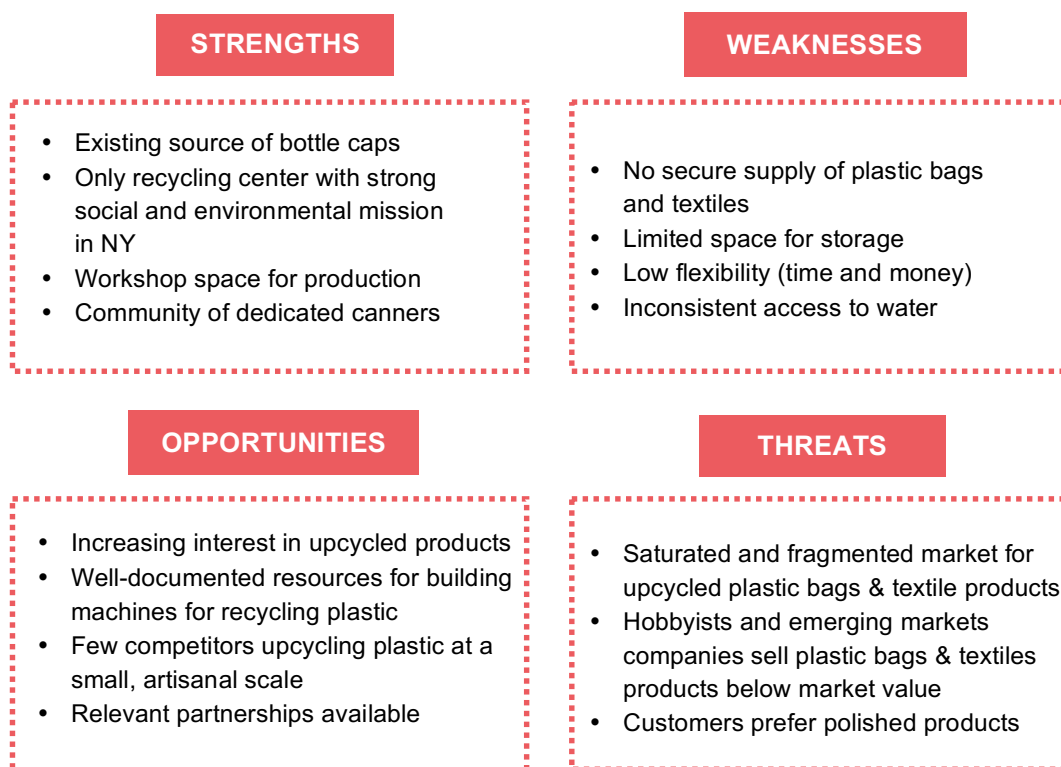


Figure 18: *Sure We Can* SWOT Analysis



# 07 // PRODUCT PLAN

## PRODUCT SELECTION FRAMEWORK

The capstone team developed a product selection framework to evaluate products that *Sure We Can* could create for the purpose of this social enterprise. Using this framework, the team assessed both products encountered during the market analysis, as well as newly identified product opportunities. The framework highlights products that are most feasible for *Sure We Can* to produce and sell. Utilizing the framework, the team evaluated each product against sets of basic criteria, feasibility criteria, and desirability criteria.



1. BASIC

**Basic Criteria:** Define the scope of products to be included in the framework. The criteria focus on products that companies in the competitor analysis are already selling successfully.



2. FEASIBILITY

**Feasibility Criteria:** Score products based on their production processes, material inputs, and financial inputs. The criteria establish the products that are considered most feasible for *Sure We Can* to create.



3. DESIRABILITY

**Desirability Criteria:** Rank the two products from each material type that scored the best according to the feasibility criteria. Engage potential customers to determine the most desirable products and their willingness to pay. The results of the engagement are used to rank key products and determine the final product recommendations.

The criteria in *Figures 19 to 21* below establish the product selection framework. The justification for each criterion can be found in *Appendix E*. The **basic** criteria ensure the scope of evaluated products are in line with the minimum requirements for *Sure We Can*'s social enterprise goals and production capabilities.

BASIC CRITERIA	
Category	Criterion
Products	<ul style="list-style-type: none"><li>• Main product sold by the companies in the upcycled/recycled market that are part of the competitor analysis</li><li>• Craft ideas that are not yet being sold that are made of the discarded materials with clear production processes</li></ul>
Production	<ul style="list-style-type: none"><li>• Production of one product by one person, takes less than three hours including preparation of materials</li><li>• Products must not be manufactured</li></ul>
Price	<ul style="list-style-type: none"><li>• Product must sell for more than \$5</li></ul>

*Figure 19: Product Selection Basic Criteria*

Once product options are defined, the **feasibility** criteria are used to score products on a scale from zero to three for each criterion (where 0 = N/A, 1 = most feasible, and 3 = least feasible). The products with the lowest overall score for each discarded material type are those deemed most feasible for *Sure We Can* to produce; meaning products can be created by canners using minimal inputs, a reasonable amount of time, and a suitable skill level.

FEASIBILITY CRITERIA	
Category	Criterion
Production Process	<ul style="list-style-type: none"> <li>• Skill level</li> <li>• Risk of injury</li> <li>• Number of machines required</li> <li>• Time it takes for one person to complete production of one product</li> <li>• Ease with which process can be adjusted to make other products</li> </ul>
Materials	<ul style="list-style-type: none"> <li>• Amount of main source material needed to make one product</li> <li>• Maintaining supply of material / ease</li> <li>• Relative importance of virgin materials</li> <li>• Ease of sourcing additional material</li> </ul>
Price	<ul style="list-style-type: none"> <li>• Discarded materials</li> <li>• Additional materials</li> <li>• Equipment</li> <li>• Price for effort (sale price per time it takes to make one product)</li> </ul>

*Figure 20: Product Selection Feasibility Criteria*

The **desirability** criteria form the basis of a customer survey since they determine customer interest in the most feasible products. The survey contains four sections: 1) demographics, 2) familiarity with upcycled products, 3) ranking of the six products, and 4) additional comments. In the ranking section, potential customers were asked to rank six products according to the product's aesthetics, their willingness to pay, and their intent to purchase. The results of the survey establish the most favored products. Analyzing each product from the feasibility and desirability perspective allowed the capstone team to finalize the top two product recommendations.

DESIRABILITY CRITERIA	
Category	Criterion
Customer Engagement	<ul style="list-style-type: none"> <li>• Aesthetically pleasing</li> <li>• Reasonable Price</li> <li>• Customer interest / intent to purchase</li> </ul>

*Figure 21: Product Selection Desirability Criteria*

# PRODUCT EVALUATION

The product selection framework evaluates 20 products as determined by the **basic** criteria. In order to narrow down to the 20 products from a larger pool of potential options, only one product per production process was included. This includes seven bottle cap products, four textile products, and nine plastic bag products. The **feasibility** criteria narrowed this number to six feasible products including: a wastebasket made of bottle caps, a bottle cap storage basket, a textile quilt, a textile rug, a plastic bag bowl and a plastic bag placemat. These six products proceeded to be evaluated by **desirability** in a customer engagement survey. *Figure 22* outlines the product evaluation process.



*Figure 22: Product Evaluation*

A total of **222 potential customers** completed the survey between October 15<sup>th</sup> and 25<sup>th</sup>, 2017 (see *Appendix F* for survey result details). Bottle cap products were assessed most favorably, followed by plastic bag products and textiles. Of the two bottle cap products, customers show a clear preference for the wastebasket. After consulting the client, it was selected as the top recommended product. The bottle cap basket ranks second in the survey results. However, the second bottle caps-based product was considered by the client to be a less desirable version of the first bottle-caps based product. Its production process is more challenging and not as well understood. Therefore, the alternative product recommendation is the bowl made from plastic bags. The product has the benefit of having a different risk and financial profile to the bottle caps-based products. Plastic bags products require comparatively less initial capital but are part of a more competitive market with less opportunity.

RANK	PRODUCT
1	Bottle Cap Wastebasket
2	Bottle Cap Basket
3	Plastic Bag Basket
4	Textile Rug
5	Plastic Bag Placemat
6	Textile Quilt

*Figure 23: Customer Ranking of Intent to Purchase*

## TOP RECOMMENDATION

### WASTEBASKET



#### HOW DOES IT WORK?

- One wastebasket is made using approximately 500 bottle caps.
- The bottle caps are shredded, heated, and poured into a mold. Different shapes can be created by using different molds. The product can be made in a variety of colors, with a solid or mixed appearance (see Figure 24).



Figure 24: Alternative Designs  
Source: Precious Plastic, 2017<sup>2829</sup>

#### WHAT ARE THE BENEFITS?

- **Seamless sourcing:** *Sure We Can* sources roughly 4,400 bottle caps per day, which could be used in this venture. Creating one wastebasket would require 11% of this total daily volume of collected bottle caps.
- **Versatile process:** Though the intention is to use this product as a wastebasket, it can also be used for storage or as a planter after a hole is drilled in the bottom.
- **Short production time:** One wastebasket can be made in two hours.

#### WHAT IS THE VALUE PROPOSITION?

- **Appeals to conscious customers:** A wastebasket made from waste is enticing for customers that seek to integrate sustainable products into their homes and offices.
- **Empowers local women:** Products are made by female canners in Brooklyn. This endeavor would empower these women by giving them an additional source of income and the opportunity to develop new skills.

#### HOW MUCH WOULD IT COST?

- **Breakeven price:** \$33.06
- **Recommended sales price:** \$35
- **Note:** The recommended price lets *Sure We Can* secure revenue in addition to breaking even, which can be used to create financial flexibility for the organization.

## ALTERNATIVE PRODUCT

### BOWL



#### HOW DOES IT WORK?

- One small multipurpose bowl is made using approximately 21 plastic bags.
- Plastic bags are cut into strings and looped together to create plastic yarn. This plastic yarn is used to crochet the bowl.
- The bowl can come in a variety of colors, depending on the color of the bags collected.

#### WHAT ARE THE BENEFITS?

- **Community engagement:** Sourcing plastic bags would require partners within the community, which would also provide an opportunity to engage people on the social enterprise's mission.
- **Versatile process:** Plastic yarn can be used like other types of yarn to create other products, such as bags and placemats.
- **Social production process:** Crocheting traditionally is a social practice, as the process is passive enough to allow a worker to converse. It would therefore allow canners to socialize and strengthen their relationships with one another.

#### WHAT IS THE VALUE PROPOSITION?

- **Appeals to conscious customers:** Plastic bags are prevalent in waste streams and a main contaminant of recycling containers. Customers may feel empowered by purchasing a useful product that addresses the issue.
- **Empowering local women:** Products are made by female canners in Brooklyn. This endeavor would empower these women by giving them an additional source of income and the opportunity to develop new skills.

#### HOW MUCH WOULD IT COST?

- **Breakeven price:** \$32.16
- **Recommended sales price:** \$33
- **Note:** The recommended price lets *Sure We Can* secure revenue in addition to breaking even, which can be used to create financial flexibility for the organization.

# 08 // OPERATIONS PLAN

## PRODUCTION

### SOURCING

### WASTEBASKET

*Sure We Can* has a secure supply of bottle caps. The organization sourced approximately 2.7 million plastic bottles in 2016, of which roughly 50% had caps. Therefore, *Sure We Can* collects nearly 113,000 caps each month and up to 1.4 million caps per year.

Bottle caps are usually made from polypropylene (PP), which is identified by the recycling number five (see *Figure 25*). Some caps are made from polyethylene terephthalate (PET), which is identified by the recycling number one. Due to their different melting points, these two plastics must be sorted by type. However, brands tend to use one type of bottle cap, which simplifies sorting. Sorting by color is an optional step that facilitates product design. However, this would lengthen sorting time and result in additional costs.



*Figure 25: Types of Plastic*  
Source: *Precious Plastic*, 2016<sup>30</sup>

The wastebasket requires up to 500 bottle caps. This is equivalent to approximately three pounds of material, since the average bottle cap weighs 2.3 grams.<sup>31</sup> If collection is done in an average five-gallon bucket with a volume of 18,942 cubic centimeters, approximately 33,205 caps will fill each bucket.<sup>32</sup> One bucket is estimated to supply enough material to produce approximately 66 wastebaskets.

### BOWL

The creation of the bowl requires up to 21 plastic bags. These bags are made into plastic yarn and crocheted into a bowl. Plastic bags are not collected through *Sure We Can*'s existing operations. Therefore, the establishment of a partnership or sourcing stream would be required. Potential options include partnering with local grocery stores or setting up a plastic bag donation bin. Partnerships are necessary to access clean plastic bags, since *Sure We Can*'s current rainwater catchment system does not provide constant access to water nor does it have enough space to properly wash and dry plastic bags.



## TECHNIQUES AND EQUIPMENT

### WASTEBASKET

For the production of the wastebasket, *Sure We Can* would require the following three main pieces of equipment:

#### SHREDDER

This machine shreds bottle caps to reduce their volume.



#### MOLD

This is a two-piece form, whose shape the product will take after compression.



#### COMPRESSION

This machine is an oven that melts the plastic and compresses it into a mold.



*Figure 26: Bottle Cap Shredding and Compression Machines from Precious Plastic, as well as Mold in the oven from Precious Plastic.*

*Source: Hakkens, 2017<sup>3334</sup>*

Detailed instructions on how to build and use these three pieces of equipment are provided by Precious Plastic; a company that provides free online guidance on building machines that reconstitute plastic. The following insights are based on the Precious Plastic website, where a large network of members share their experience and advice on building these three pieces of equipment. For more information on Precious Plastic, see *Appendix G*.

The shredding machine is used to break down plastic into flakes. The process reduces the volume of bottle caps, facilitating their storage and transformation. The smaller the flakes, the faster the plastic melts and the easier to compress plastic into a mold. The main component of the shredding machine is a “hopper”, which is used to funnel the plastic into rotating blades powered by an electric motor. The compression machine is a repurposed oven with a platform raised by a jack. It compresses the plastic into the mold as the plastic heats and melts in the oven. The mold used in the Precious Plastic process is made from sheet metal, which is laser cut into the desired shape and welded together. The oven needs to be temperature controlled due to the different melting points of various bottle cap plastics. Caps made from PP will melt in a mold that is heated to 170 degrees Celsius (338 degrees Fahrenheit). However, PET caps do not begin to melt until temperatures reach 240 degrees Celsius (430 degrees Fahrenheit).<sup>35</sup>

The machines can be difficult to source and build as they require specialized metal machining, electrical wiring, and welding. The mold can either be made from a computer numeric controlled (CNC) cutting machine or welded sheet metal. Precious Plastic suggests the more

finished the mold, the less time required in the finishing stage of the production process. These larger pieces of equipment will need to be built and would require additional workshop space than available. The team recommends establishing partnerships to support this process (see Partnerships section below). Other miscellaneous equipment for the finishing process includes sanding blocks, utility knives, and a heat gun. These items ensure the end product is ready for customer retail.

## BOWL

For the production process of the bowl, *Sure We Can* will need space for canners to handcraft the product. A large table should be available, such that plastic bags can be spread out. Chairs should also be made available for canners to use while crocheting. The bowl itself is created using a two-step process. First, plastic bags are cut into strips and looped together to create yarn (see Figure 27). Second, the plastic yarn is used like regular yarn to crochet the bowl.

While creating plastic yarn is a straight forward process, crocheting is a handcraft that requires practice. However, the skill can be self-taught and refined within a matter of weeks to the degree necessary to create the bowls. Canners could self-teach or train in groups using online tutorials, including YouTube videos and written guides, that provide step-by-step instructions on how to crochet. The creation of one small bowl by one worker is estimated to take one to two hours.

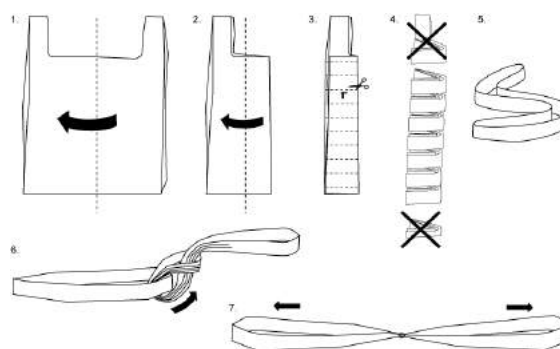


Figure 27: Instructions for Making Plastic Yarn  
Source: *Plastic Bag Crafts*, 2017<sup>36</sup>

## WORKSPACE

*Sure We Can* has available storage space that could be converted into a workshop. The production of the bowl could be undertaken in this space, provided that tables and chairs are added. However, the space is not large enough for the production of the wastebasket. The organization has a shipping container (20 ft. x 8 ft.) that could also be repurposed as workshop space. Both the bowl and wastebasket could be produced in this space. For the production of the bowl, tables and chairs are required. The production of the wastebasket requires a shredding and compression machine that is powered by electricity. As such, the space would need to be fitted with three to six electrical outlets. The entire production chain, including the machines, can fit within a standard shipping container. The shredding machine is approximately two feet in length, one foot in depth, and approximately four feet in height. The compression machine is approximately two feet in length, two feet in depth, and five and a quarter foot in height. The finishing process of the wastebasket requires the installation of a standard-sized countertop workspace; approximately 36 inches in height, 25 inches in depth, and about 72 inches in length. See *Appendix H* for details on inventory (raw materials, work in progress, and finished goods) control.

## WASTE MANAGEMENT

Both the wastebasket and bowl production processes result in minimal waste. However, this waste will need to be addressed. Some waste materials can be reused in subsequent products. For example, the wastebasket production process produces some 'spill-over' of material during the molding process. This must be cut off to create the final product. In the training phase, employees are likely to generate more 'spill-over' as they establish how much material is required for each mold. The financial model accounts for this learning curve by incorporating a 40% inflation of material inputs in the first month production. However, the 'spill-over' can be cut, organized by plastic type, and reintroduced during the molding process of a subsequent product. The plastic yarn creation process also results in excess plastic material waste during the cutting phase of plastic bags (see Step 4 in *Figure 27* above). *Sure We Can* could explore possibilities of reusing these strips to create additional plastic yarn. Alternatively, the waste could be returned to plastic bag drop-off stations.

## REVERSE LOGISTICS

Reverse logistics is a method of supply chain management. The concept is for a given product to be returned by the end customer, thereby enabling the manufacturer to return the product to the market place. This process is a way of recapturing value in used products. It usually involves refurbishing and repackaging.<sup>37</sup> In the case of the wastebasket, end customers could return damaged products to be re-melted and transformed into new products. *Sure We Can* would need to establish a process to educate and incentivize customers to return products to the organization. For example, *Sure We Can* could provide a discount for the customer's next purchase. The organization could also offer repairs for products at a fee. In the case of the plastic bag bowl, *Sure We Can* could take back damaged products to salvage plastic yarn and reuse it in the creation of new products. However, this process would not be as simple as that for the wastebasket. Unraveling a bowl will yield some torn yarn, which cannot be reused. However, this could be recycled with other waste at dedicated drop-off locations.

## RISKS

The use of shredding machinery and the compressing oven has associated safety concerns. Workers require thorough education and training to safely operate these machines and prevent accidents. Furthermore, it is necessary to ventilate the workshop properly and provide a fire extinguisher. The process of creating plastic yarn and crocheting entails limited risks. However, extended crocheting time has the potential to cause strain to extremities. This should be taken into account when allocating time for production by allowing breaks between the creation of plastic yarn and crocheting.

# DISTRIBUTION

By analyzing best practices in the market and engaging retailers, the team identified two successful distribution channels for upcycled products: online sales and partnerships with local retailers. The team recommends *Sure We Can* implement both these distribution strategies incrementally to grow sales in conjunction with operational capacity (see *Figure 28*).

PHASE 1	PHASE 2	PHASE 3
Establish online distribution channels	Sell products through local retailers	Explore one-off bulk orders and partnerships with wholesalers

Figure 28: Distribution Phases

The team recommends the **first phase** of *Sure We Can*’s strategy should focus on establishing an online presence that provides a platform for product sales. Establishing an online store through the *Sure We Can* website would enable immediate sales while preparing for phase two of the strategy, namely selling products through local retailers. This is important since delays in negotiating agreements with retailers could put a financial strain on the new enterprise, if no alternative modes of sale are available. With its own online store, *Sure We Can* could use UPS e-commerce services. However, this would add to the products’ selling price. Instead, *Sure We Can* could sell products through its online store and invite customers to pick these up from their lot. Alternatively, the team recommends partnering with a distribution company that would package and distribute products for *Sure We Can*. Some potential distribution partners are GFD Courier and Zipments, which provide e-commerce services. Local courier service options include Mobile Messenger Service and NY Minute.

The team recommends the **second phase** focus on selling products through local retailers. *Sure We Can* is located in a neighborhood with several retailers that sell handcrafted and sustainability-focused products. Many of these retailers target a customer base that is environmentally and socially conscious. Local retailers were identified and interviewed to determine their interest and willingness to sell the two recommended products. The criteria for selecting those retailers are as follows: **1)** the store primarily sells home goods, **2)** the store has an environmental and/or social mission, and **3)** the store is located in or near *Sure We Can*’s neighborhood and displays locally made products.

Store managers were engaged by phone, email, and in-person store visits. The interviews gauged whether these stores had previously sold upcycled products and whether they were interested in selling the wastebaskets and crocheted bowls. Of the surveyed retailers, positive feedback was received from Friend NYC, Green in Brooklyn, and Lancelotti Housewares. These retailers expressed interest in selling both products and supporting a local mission-driven enterprise for *Sure We Can*. However, these suggested needing a prototype to confirm their interest. It is also important to highlight that retailers are expected to start with small orders and take products on a consignment basis. This suggests *Sure We Can* would not get compensated until the local retailer has sold the item to a customer. In this second phase,

*Sure We Can* may also consider leveraging existing partnerships with distribution companies, such as with Coca-Cola, to sell additional merchandise. These partnerships could be extended to facilitate corporate programs, where employees volunteer at *Sure We Can*.

The team recommends *Sure We Can* transition to the **third phase** of its strategy by exploring one-off bulk orders from organizations, such as offices, facilities, and hotels. The organization should target companies that are sustainability-minded. At the same time, *Sure We Can* could also explore the possibility of partnerships with wholesalers, such as Whole Foods. Once production capabilities meet the demand of a wholesale distribution model, this strategy provides the most stable source of revenue.

## PARTNERSHIPS

Creating partnerships with external companies to source equipment and train canners is essential to the social enterprise's success. This section outlines potential partnership opportunities for the two recommended products.

### WASTEBASKET

- Precious Plastic is a company that provides online resources for making plastic recycling machines and has a network of members that build the machines necessary to create a wastebasket. A partnership with existing local members could help *Sure We Can* gain the knowledge and expertise necessary to build the required machines.
- Multiple workshops in Brooklyn specialize in welding. The workshops have the necessary space to build a shredder and compression mold. Two of these workshops, SheWeld and Brooklyn Metals Works, were identified as the best locations for potential partnerships. Both workshops were reached out to and a response was received from Brian, a Brooklyn Metal Works employee. After reviewing the materials for building the equipment, the project was deemed outside of the scope of their workshop as they prefer working with nonferrous metal. Brian recommended individual welders within Brooklyn Metal Works network as potential partners for the building of the equipment.

### BOWL

- A local crafting organization, Brooklyn Craft Company, specializes in classes for various crafting processes. Partnering with this organization may be beneficial for English speaking canners to develop skills in crocheting. Non-English speaking canners may prefer to make use of online resources.
- The Plastic Film Recycling Initiative is a resource that allows people to find donation points for plastic bags. Three local grocery stores are drop off points for Plastic Film Recycling, including: Bravo, Azure, and Estevez. Partnerships with these stores could facilitate the sourcing of plastic bags. These smaller retailers are preferred due to the convenience of their location and alignment with community-oriented missions.

# 09 // MARKETING PLAN

The following section details the strategies *Sure We Can* could pursue to market its new enterprise and products. The strategy draws on best practices implemented by other social enterprises and is tailored to *Sure We Can*'s needs. Furthermore, it focuses on telling the story of the product, the canners, and the enterprise's wider mission. At a minimum, the team recommends *Sure We Can* further its current social media presence with low-cost paid advertising. The team also recommends including a tag on each product that outlines the product's impact. If additional resources are available, *Sure We Can* could pursue engaging local newspapers or blogs and creating a promotional video to be shared through its social media channels. Similarly, the organization could host a launch event.

## PRIORITIZED MARKETING CHANNELS

### SOCIAL MEDIA

Currently, *Sure We Can* runs various social media accounts with more than 600 followers on both Facebook<sup>38</sup> and Instagram<sup>39</sup>, and approximately 150 followers on Twitter<sup>40</sup>. *Sure We Can* can utilize these channels to promote its new enterprise in a cost-effective manner. At minimum, *Sure We Can* should publish content to showcase its new product on Facebook, Instagram, and Twitter. While the strategy has no associated cost, it is limited in reach. Reach can be extended by optimizing the use of hashtags. However, this is unlikely to spread awareness of the product significantly beyond *Sure We Can*'s current network.

In order to create a wider reach, product-specific content should be supplemented by low-cost paid advertising. Given *Sure We Can*'s limited resources, the team recommends prioritizing advertising on Facebook and Instagram. The organization is familiar with these tools and has a larger presence on Instagram and Facebook than on Twitter. Furthermore, Facebook and Instagram are more conducive to sharing stories and communicating with potential customers. Alternatively, *Sure We Can* could make use of Twitter; a platform that is more focused on current events, company updates, and opinions. However, staying relevant on Twitter users' feeds requires multiple posts per day, while Facebook and Instagram only require several posts a week.

As Instagram is owned by Facebook, paid advertising for both platforms is managed through Facebook. To run an advertisement, *Sure We Can* would need to set up a campaign with a specific audience, goal, budget, format, and placement. Depending on the type of advertisement and the goals of the campaign, the minimum daily budget ranges from \$1 to \$5.<sup>41</sup> However, actual spend is set by the number of impressions (how often the content is seen in total) or clicks (how often the content leads to engagement). Per unit costs will be affected by what competitors are bidding. Advertisement placement can be automatically



optimized across both Facebook and Instagram to reach the target audience. Once initiated, *Sure We Can* can monitor the campaign’s impact and use insights to optimize future campaigns. Twitter advertisements work similarly, except that spend is determined only by the number of times a desired action is taken.<sup>42</sup>

The team recommends setting up advertising campaigns at key milestones. For example, *Sure We Can* could create an awareness campaign once a product prototype is created. Similarly, a traffic campaign can be launched once the product is available for purchase online or at a physical location. To achieve growth in product sales past the initial launch period, *Sure We Can* should continue to utilize paid advertisements.

**PRODUCT TAGS**

Social enterprises often sell products with physical tags that explain the product’s background and impact. These tags are usually printed on cardstock and attached to the product with a string. Recently, electronic product tags have emerged to grant customers online access to similar information. The table below compares both of these tag options.

PRODUCT TAG OPTIONS		
	Advantages	Disadvantages
Physical Tag	<ul style="list-style-type: none"><li>• Easy to access</li><li>• Tactile experience</li><li>• No technology necessary</li></ul>	<ul style="list-style-type: none"><li>• Uses physical resources</li><li>• FSC or 100% recycled paper is more expensive</li></ul>
Electronic Tag	<ul style="list-style-type: none"><li>• No use of physical resources</li><li>• Provides in-depth information</li><li>• Multimedia</li></ul>	<ul style="list-style-type: none"><li>• Customer is unlikely to access the information until product has been purchased</li><li>• Larger tag development effort</li></ul>

Figure 29: Advantages and Disadvantages of Product Tag Options

## TAG OPTIONS

Below are examples of product tags used by other social enterprises. These demonstrate the importance of highly visual tags with clear impact statements. The examples also show how tags can create a personal connection between the customer and the product creator.

### PHYSICAL TAG EXAMPLES

#### // TOMS

TOMS is a Californian social enterprise that donates one pair of shoes to a child in need, for every pair of shoes purchased by a customer. TOMS uses paper-based product tags, which are attached to each pair of shoes. The tags share its mission by including the company's "One for One" slogan.



Figure 30: Example Tag 1  
Source: TOMS, 2014<sup>43</sup>

#### // ÇÖP(M)ADAM

ÇÖP(M)ADAM is a Turkish nongovernmental organization that repurposes waste into hand-crafted products, while creating employment opportunities for women. The company also utilizes paper-based product tags. The tag explains the story of the organization and creates a personal connection between the product creator and the customer by including the creator's signature.

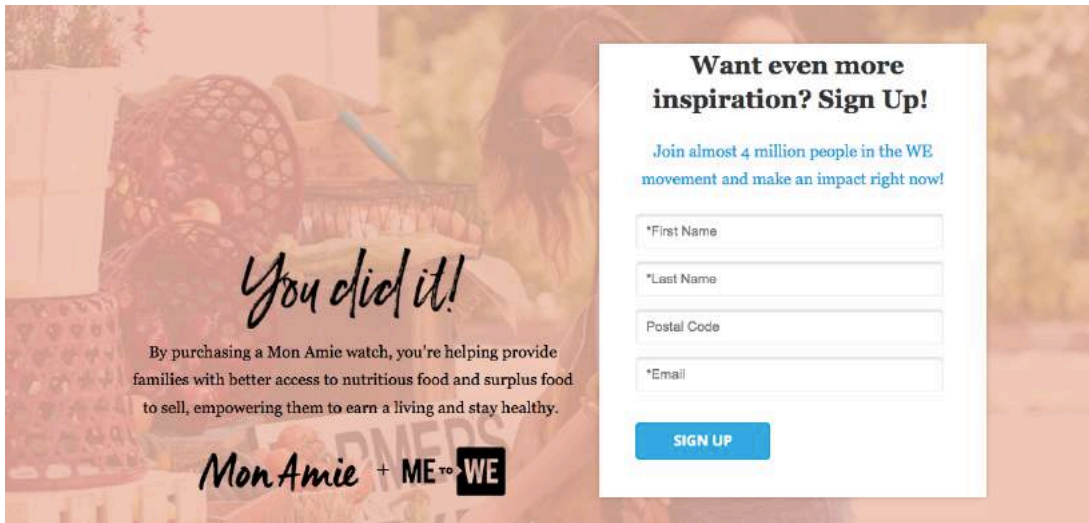


Figure 31: Example Tag 2  
Source: Keddy'nin Dolabi, 2010<sup>44</sup>

### ELECTRONIC TAG EXAMPLE

#### // MON AMIE

Mon Amie is a social enterprise that sells watches. For every watch purchased, the company makes donations related to the cause associated with the particular watch. Mon Amie uses an electronic tag powered by WE.org<sup>45</sup>, which captures the story of the watch and its impact through photographs, videos, interactive maps, and other multimedia. Each customer is sent a code by email that is to be entered on the Track Your Impact website to access the electronic tag. Customers can also share the product's impact story on social media.



## You did it!

By purchasing a Mon Amie watch, you're helping provide families with better access to nutritious food and surplus food to sell, empowering them to earn a living and stay healthy.

**Mon Amie** + ME to **WE**

### Want even more inspiration? Sign Up!

Join almost 4 million people in the WE movement and make an impact right now!

[SIGN UP](#)



Skip. Step. Put. These three words are at the root of transformative change happening on a community farm in Pimbiniyet, Kenya. Here, our team joined 43-year-old Janet for a hands-on lesson in cabbage-planting, and to learn how this enterprising farmer is sowing the seeds of her family's future.

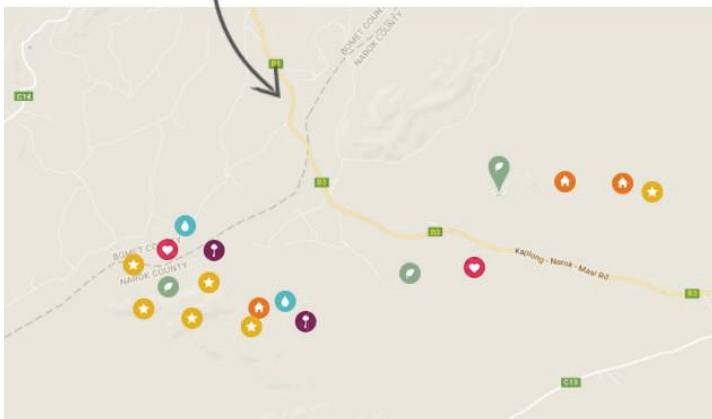
Pimbiniyet, Kenya  
IMPACT: Food


[READ THE FULL STORY](#)

learn more!

## Impact Stories

Check out how the WE Villages sustainable development model is making an impact on food in Kenya.





[Food](#)

### A father in the field.

When this Kenyan dad refused to watch his crops fail, he unearthed the power to provide.

[Read More >](#)

Figure 32: Example Tag 3  
Source: Track Your Impact, 2017<sup>46</sup>

## TAG RECOMMENDATIONS

The team recommends *Sure We Can* utilize a physical product tag in the short-term to medium-term, since electronic tags take longer to develop. Once *Sure We Can* has acquired sufficient resources, the team recommends it develop an electronic tag. The team designed a sample product tag for the wastebasket. With slight adjustments, the tag could also be adapted to the bowl. The tag explains where, by whom, and how the product was created. It also includes the signature of the canner who created the product.



Figure 33: Sample Product Tag Side 1



Figure 34: Sample Product Tag Side 2

The product tag is envisioned to be two-sided (3"x3"), printed with non-toxic inks on 100% recycled and Forest Stewardship Council (FSC) certified paper. The table below provides pricing examples from Brooklyn-based printing company, the Rolling Press.

PRODUCT TAG PRICE OPTIONS		
Number of Tags	Price Per Tag	Total
100	\$0.55	\$55
250	\$0.24	\$60
500	\$0.14	\$70

Figure 35: Product Tag Price Options  
Source: Rolling Press, 2017<sup>47</sup>



# ADDITIONAL MARKETING OPPORTUNITIES

## NEWS ARTICLES AND BLOG POSTS

By reaching out to local newspapers, *Sure We Can* could potentially publish an interview or article about the new initiative and product. *Sure We Can* could also contact bloggers to feature the enterprise on blogs that cover topics related to sustainability and zero waste lifestyles.

## EVENTS-BASED PROMOTIONS

*Sure We Can* could feature the new initiative and product by hosting or cosponsoring events that relate to sustainability. Given *Sure We Can*'s space constraints, this would likely require partnerships and is therefore not prioritized as a recommendation.

## PROMOTIONAL VIDEO

Another option is for *Sure We Can* to create a video that explains the new enterprise and its product in an engaging way. The video could show footage of canners creating the products and could tell their individual stories. *Sure We Can* could share the video on its website, social media channels, and on YouTube. This option is not a priority recommendation since shooting and editing a video is time-consuming and skill-dependent. However, should a pro bono partnership be established, for instance with a university student, the strategy may be worth pursuing.



Figure 36: Canners and Murals in *Sure We Can* Lot  
Source: *Sure We Can*, 2017<sup>48</sup>

# 10 // FINANCIAL PLAN

## FINANCIAL MODEL OVERVIEW

The team created a five-year financial model to assess the proposed enterprise's economic feasibility. The model is an Excel tool with dynamic inputs, some of which are featured in *Figure 37*. This tool allows *Sure We Can* to consider different production scenarios and make decisions based on the outputs.

MONTHLY ORDER AMOUNT
MONTHLY ORDER ESCALATION %
RETAIL SALE PRICE
OVERHEAD %
GRANT / FUNDING
DISCARDED MATERIAL INCENTIVE

*Figure 37: Main Inputs of the Model*

The capstone team created three production scenarios for each of the recommended products to determine appropriate production parameters and product pricing. The **first scenario** is the most conservative scenario, which limits production to 64 wastebaskets and 200 bowls per month. The number of bowls is significantly higher than the number of wastebaskets as production growth for the latter is limited by the number of machines that *Sure We Can* can have. This constraint does not apply to the bowl scenario as additional crochet hooks is cheaper and easier. In this conservative scenario,

*Sure We Can* has one set of machines. The **second scenario** is slightly more optimistic and limits production to 128 wastebaskets and 400 bowls. For the wastebasket, this assumes that one additional compression machine is added once enough cash flow has been accumulated to acquire the machine. The **third scenario** is the most aggressive scenario, limiting production to 320 wastebaskets and 800 bowls. In the case of the wastebasket, a total of five compression machines are acquired and used for the duration of the five-year period.

Using these three production scenarios, the model provides 56 input scenarios for each product and calculates the associated breakeven prices. The breakeven price is the price at which the net present value (NPV) of the enterprise is equal to \$0, within the five-year period. The model also provides a NPV sensitivity analysis, which shows how the economics of the project change at different prices. This includes the calculated breakeven prices, input retail prices, recommended price, and market research prices. Ultimately, for both recommended products, the most reasonable production scenario was selected to finalize recommended pricing. Details can be found in the *Recommended Pricing* sections below.

In addition to providing a high level financial overview of the proposed product recommendations, the model also uses the same inputs to calculate relevant social and environmental metrics. For example, according to the financial model inputs, the model calculates the money distributed to canners and the emissions avoided. As such, the financial

model also serves as a tool for *Sure We Can* to explore the potential triple impact of the proposed enterprise. To see the results of this analysis, please see *Chapter 11 - Triple Impact Assessment*.

## ECONOMIC ASSUMPTIONS

The model uses certain economic assumptions. The first assumption is that canners will be paid a minimum wage for their labor. As of December 31, 2017, the minimum wage for hourly employees in New York City, for companies with less than ten employees, will be \$12.00 an hour.<sup>49</sup> Other economic assumptions include the escalation and discount rates. Both are set at a reasonable 2%, which is roughly the annual inflation rate.<sup>50</sup>

## RECOMMENDATION 1: WASTEBASKET

### INITIAL CAPITAL NEEDED

Assuming ten wastebaskets are created in the first month of production, cumulative costs during this month equate to \$2,022 (see *Figure 38* for a detailed breakdown). Roughly 80% would be spent on acquiring the necessary equipment, while nearly 20% would be spent on wages. Less than 1% would be needed for operating costs, including marketing and utilities.

The machinery needed to produce the wastebaskets is modeled after those used by Precious Plastic. This organization aims to provide anyone with the resources to build these machines and provides comprehensive resources on the costs associated with constructing these machines.<sup>51</sup> See *Appendix I* for a detailed breakdown of these equipment costs. However, these prices are based on the resourcefulness of Precious Plastic's founder Dave Hakken and, therefore, are likely too low for *Sure We Can*. The capstone team used Precious Plastic's online community to determine more realistic cost estimates for *Sure We Can*. For instance, the detailed of costs<sup>52</sup> of the shredder machine are provided by forum user, Dan Hettinger,<sup>53</sup> from North Carolina.

First Production Month Cumulative Costs	Total
Equipment Costs	\$1,608.00
Operating Costs	\$27.72
Salary/Wage Costs	\$386.40
<b>Total</b>	<b>\$2,022.12</b>

*Figure 38: First Production Month Cumulative Costs*



## RECOMMENDED PRICING

Having analyzed the three production scenarios mentioned, the second production scenario (one additional machine acquired, once cash flow is sufficient) was deemed most reasonable for *Sure We Can*. Using this scenario, the breakeven price is \$33.06. However, this price is not economically sustainable for *Sure We Can* in the long-term. Therefore, the team recommends a minimum sales price of \$35 to provide *Sure We Can* with an economic buffer that can be used to invest in the organization.

## FINANCIAL MODEL OUTPUTS AND CASH FLOW

Based on production scenario two and the recommended pricing of \$35 per wastebasket, *Sure We Can*'s social enterprise would have a net present value of \$90,401. Yet, this assumes that the necessary funding can be secured to cover the cumulative costs of the first month of production. In this case, the enterprise would see positive cash flow in month seven. The return on investment (ROI) of the enterprise would be 12%. This is based on the cost to produce one item, versus the recommended retail sales price.

However, the model shows that without grant funding the economics of the project are not favorable. Positive cash flow would be delayed until month 30 and the NPV would be -\$2,981. The negative NPV shows that without funding an enterprise that produces wastebaskets is not an economically feasible option. In this case, the team recommends that *Sure We Can* consider the alternative product, namely the plastic bag bowl.

Five-Year Cumulative Costs	Total	Net Present Value
Total revenue and funding	\$176,393	\$86,342
Initial Capital and equipment maintenance costs	\$3,251	\$2,936
Additional product costs	\$9,187	\$4,515
Salary wage costs	\$153,181	\$74,256

Figure 39: High-Level Financial Statement of the Modeled Five-Year Enterprise

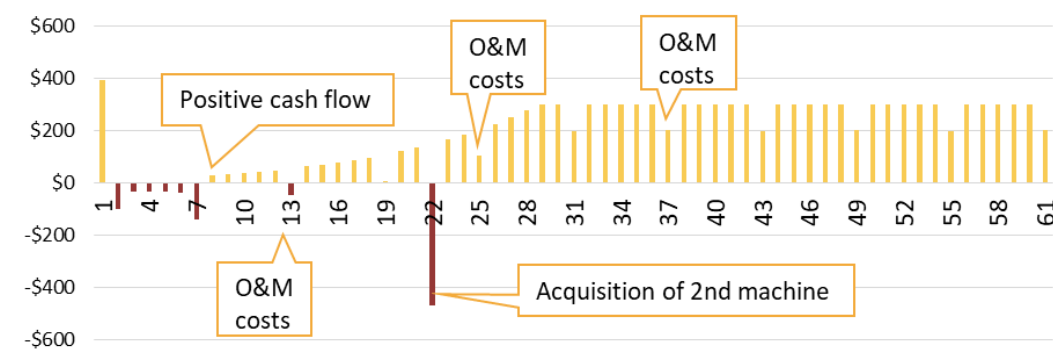


Figure 40: Monthly Wastebasket Cash Flow – Based on Recommended Sales Price. From ‘Executive Summary - Model’ from the financial model. Assumptions: production scenario two, \$35 sales price, initial monthly order of ten, 10% escalation, 15% overhead, \$2000 grant, \$0.05 per cap incentive, \$12.50 monthly marketing costs.

## RECOMMENDATION 2: BOWL

### INITIAL CAPITAL NEEDED

Assuming ten bowls are created in the first month of production, cumulative costs equate to approximately \$456 (see Figure 41 for breakdown). Producing the bowls requires minimal initial capital, as they are made by crocheting using handmade plastic yarn.<sup>54</sup> The equipment and materials needed include scissors and crochet hooks, which cost approximately \$48. The costs of the equipment are based on prices from websites, such as Amazon<sup>55</sup> and IKEA. For a full breakdown of these prices, see Appendix J.<sup>56</sup> Prices may fluctuate depending on the ability to source the equipment. Note that washing the plastic bags before turning them into plastic yarn was not considered as *Sure We Can* has limited access to water. Thus, costs related to washing are not included in these estimates.

First Production Month Cumulative Costs	Total
Equipment costs	\$47.97
Operating costs	\$22.01
Salary/wage costs	\$386.40
<b>Total</b>	<b>\$456.38</b>

Figure 41: High-Level Financial Statement of the Modeled Five-Year Enterprise

### RECOMMENDED PRICING

Analyzing the three production scenarios mentioned, the first production scenario (production limited to 200 products per month) was deemed most reasonable for *Sure We Can*. Using this

scenario, the breakeven price is \$32.16. However, this price is not economically sustainable for *Sure We Can* in the long-term. Therefore, the team recommends a minimum sales price of \$33 to provide *Sure We Can* with an economic buffer that can be used to invest in the organization. However, it is important to highlight that competitors sell similar products at significantly lower prices. For instance, FunkyJunk Recycled sells a similar bowl for \$18. This is largely because the company is located in a country with significantly lower labor costs. Other competitors include hobbyists, who sell similar products below market value as they oftentimes do not value their labor according to market standards. This demonstrates the difficulties *Sure We Can* may face in pursuing the crocheted bowl.

## FINANCIAL MODEL OUTPUTS AND CASH FLOW

Based on production scenario one and the recommended pricing of \$33 per bowl, *Sure We Can*'s social enterprise would have a NPV of \$49,545. This assumes no external funding is received. The team adopted this assumption due to the fact that the wastebasket is clearly a preferable product and that the bowl should only be pursued if *Sure We Can* cannot secure external funding. In this case, the enterprise would experience positive cash flow in month 21 and have a ROI of 11%.

Five Year Cumulative Costs	Total	Net Present Value
Total revenue and funding	\$230,416	\$106,797
Initial capital and equipment maintenance costs	\$79	\$76
Additional product costs	\$8,137	\$3,859
Salary wage costs	\$214,503	\$99,602

Figure 42: High-Level Financial Statement of the Modeled Five-Year Enterprise

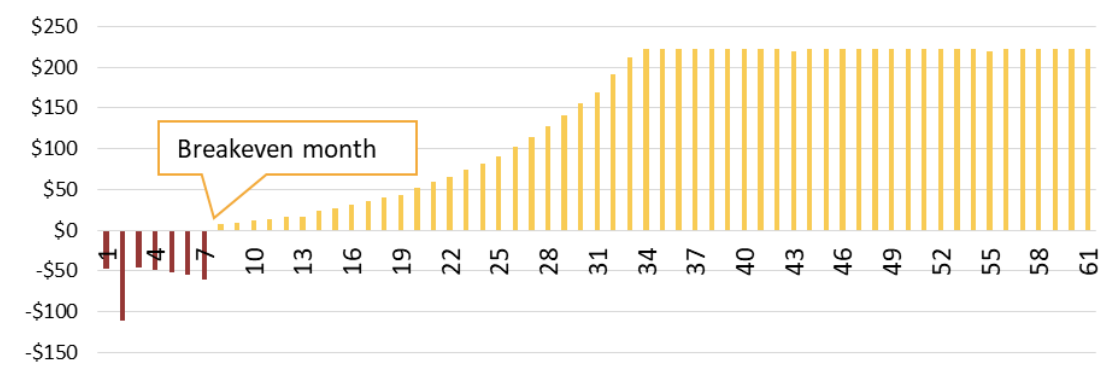


Figure 43: Monthly Bowl Cash Flow – Based on Recommended Sales Price. From 'Executive Summary – Model' from the financial model. Assumptions: scenario one, \$33 sales price, initial monthly order of ten, 10% escalation, 15% overhead, no grant, \$0.05 incentive per cap, and \$12.50 monthly marketing costs.

# FUNDING OPPORTUNITIES FRAMEWORK

Considering the estimated costs of initial capital required to launch the social enterprise, securing a source of funding is critical. Initial research identified 16 potential funding opportunities for *Sure We Can*. These 16 opportunities were composed of grants, impact investment, loans, and crowd-funding platforms. The team also considered donors and high net worth individuals. Similar to the process of establishing key competitors and feasible product recommendations, the team developed a framework to determine the most promising funding opportunities. This framework includes **basic**, **essential**, and **nonessential** criteria to narrow the opportunities.

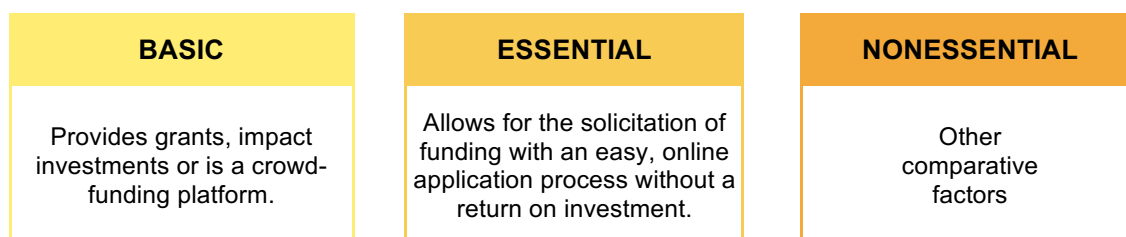


Figure 44: Funding Opportunities Framework

The criteria in *Figures 45 to 47* below establish the funding opportunity framework. The **basic** criteria narrow the scope of the research to certain investment types.

BASIC CRITERIA	
Category	Criterion
Investment Type	<ul style="list-style-type: none"> <li>Investment through grants, impact investment, or crowdfunding</li> </ul>

Figure 45: Funding Opportunities Basic Criteria

There are six **essential** criteria that further narrow down the opportunities. These are based on funding awarded and ease of applying.

ESSENTIAL CRITERIA	
Category	Criterion
Application	<ul style="list-style-type: none"> <li>Has an online application</li> <li>Accepts solicitations for funding directly</li> </ul>
Social	<ul style="list-style-type: none"> <li>Investment/Funding based on social attributes of project</li> </ul>
Monetary	<ul style="list-style-type: none"> <li>Does not require a return on investment</li> <li>Does not require a fee for soliciting to fund raise</li> </ul>

Figure 46: Funding Opportunities Essential Criteria

The **nonessential** criteria are not designed to exclude funding opportunities but rather to prioritize those with greater chances of award.

NONESENTIAL CRITERIA	
Category	Criterion
Other	<ul style="list-style-type: none"> <li>501 (c)(3)</li> </ul>
Location	<ul style="list-style-type: none"> <li>NYC based organization</li> </ul>
Opportunity	<ul style="list-style-type: none"> <li>Provides multiple investment opportunities (not a once-a-year, one-a-year opportunity)</li> </ul>
Monetary	<ul style="list-style-type: none"> <li>Provides funding over \$5,000</li> </ul>

Figure 47: Funding Opportunities Nonessential Criteria

## FUNDING OPPORTUNITIES EVALUATION

The framework identified 16 organizations, five of which meet all six essential criteria (see Figure 48). Of these five organizations, four provide grant funding and one is a crowd-funding platform. No impact investments were considered as all identified organizations require a return on investment or payback at a terminal date. Only one of the five organizations meets all **basic**, **essential** and **nonessential** criteria. Below is an overview of the main recommended grant, The Tiger Foundation, and the four other identified funding opportunities. While the Tiger Foundation is considered the most promising funding opportunity, the team recommends *Sure We Can* apply to all opportunities to maximize its chances of securing funding.



Figure 48: Funding Opportunity Evaluation



The **Tiger Foundation**<sup>57</sup> is based in New York City (NYC) and focuses on combating poverty in the city. The Foundation meets all basic, essential, and nonessential criteria. It is the main recommended funding opportunity due to its strong history of supporting likeminded social projects and the high number of grants it awards annually. The Foundation has a step-by-step online application with a detailed list of application materials (see *Appendix K*). A review of the Foundation's 990-PF 2015 form, shows that it provides grants ranging from \$65,000 to \$900,000.<sup>58</sup> While these ranges are outside the enterprise's needs, the Foundation represents a great opportunity for the proposed enterprise.



The **Pollination Project** supports projects with a social change vision.<sup>59</sup> This organization provides funding through seed grants of \$1,000. However, if the project is successful, applicants can apply for a larger \$5,000 grant. Their daily grants provide many opportunities for *Sure We Can* to apply. However, a seed grant of only \$1,000 would need to be supplemented. The application process is available online after a prescreen questionnaire (see *Appendix K*).



The **Tamer Fund for Social Ventures**<sup>60</sup> is Columbia University's venture fund, providing seed grants of up to \$25,000 to early-stage social and environmental ventures. The ventures must be led by Columbia University alumni or have significant involvement by Columbia University faculty or researchers. The assessment process is extensive, requiring a six-week assessment period. The venture needs to be pitched to the Investing in Social Ventures course and works with an assigned due diligence team.<sup>61</sup>



The **W.K. Kellogg Foundation** (WKKF) is focused on the welfare of children, supporting families and communities to ensure the success of these children.<sup>62</sup> WKKF provides grant funding for capital expenses and has a history of supporting economic empowerment projects. WKKF has a detailed online application process with a list of necessary documentation, such as a full project budget and evaluation plan. *Sure We Can* meets the minimum requirement of being a 501(c)(3) legal entity.



**Chuffed** is a crowdfunding platform for nonprofits and social enterprises.<sup>63</sup> Unlike other platforms, Chuffed is geared toward social ventures. The fee that other crowdfunding platforms, such as IndieGoGo or GoFundMe include, are not required on Chuffed. Instead, Chuffed's fee is applied on top of a donation. This allows the fundee to keep 100% of the donations.

# 11 // TRIPLE IMPACT

## PROJECTED IMPACT ASSESSMENT

The purpose of the Triple Impact Dashboard is to measure and monitor the social, economic, and environmental impact of the new social enterprise. The dashboard is divided into three sections that represent each type of impact: social, environmental, and economic.

The **social** impact aspect of the dashboard monitors the collection of plastic bags, bottle caps, and the monetary incentives distributed in the community through these activities. It will also track production hours for each employee. The **environmental** impact aspect of the dashboard measures the amount of waste diverted from landfills. It monitors the collection of discarded waste as well as the consumption of water and electricity from operations. The **economic** impact part of the dashboard monitors the inventory and financial information.

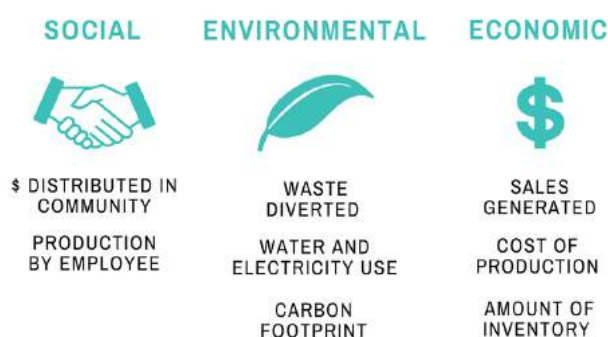


Figure 49: Dashboard Sections and Outputs

## THE TOOL

### KEY PERFORMANCE INDICATORS

The following Key Performance Indicators (KPIs) will help monitor the enterprise's operations.

#### SOCIAL

- Collection levels and collection goal of discarded items by weight
- Production levels and production goal of each product, including total production trends, production hours, and products created by employee
- Dollars distributed and hours contributed to the community



## ENVIRONMENTAL

- Total number of discarded items avoided from landfill and carbon emissions avoided
- Environmental equivalency of carbon emissions emitted using comparative measures from the Environmental Protection Agency (EPA) equivalencies calculator<sup>64</sup>, such as:
  - Passenger vehicles driven for one year
  - Annual electricity use of an average household
  - Carbon sequestered from acres of U.S. forests in one year<sup>65</sup>
- Operational consumption of water and electricity

## ECONOMIC

- Products sold (by sales amount, number sold, market type) and sales goals
- Breakeven price and inventory from production and sales

## MEASURING AND MONITORING

*Sure We Can* should regularly input collection, production, and sales data (see *Figure 50*) into the triple impact dashboard. This will ensure the proper monitoring and evaluation of its operations. Targets are also included in the dashboard (see *Figure 50*). These should be considered as recommendations, which *Sure We Can* may choose to revise once the enterprise is operational.

KPI INPUTS AND RECOMMENDED TARGETS		
Data Type	Inputs	Targets
Collection	<ul style="list-style-type: none"> <li>• Date of collection, discarded material type, weight of discarded material collected</li> </ul>	<ul style="list-style-type: none"> <li>• First month: Collect 7 lbs of plastic bags or collect lbs of plastic bottles</li> <li>• Thereafter: Increase collection by 2%</li> </ul>
Production	<ul style="list-style-type: none"> <li>• Date, product type, employee name, employee gender, hours of labor, number of products created</li> </ul>	<ul style="list-style-type: none"> <li>• First month: Produce twice the required amount needed</li> <li>• Thereafter: Produce</li> </ul>
Sales	<ul style="list-style-type: none"> <li>• Date, product type, sale mechanism: wholesale or retail, number of products sold, market type</li> </ul>	<ul style="list-style-type: none"> <li>• First month: Sell 25% of the products created in the first month</li> <li>• Thereafter: Increase collection by 2%</li> </ul>

*Figure 50: Key Performance Indicator Inputs*

The set of assumptions that underpin the suggested KPIs in the dashboard are listed below. These can and should be modified by *Sure We Can* once operations begin.

## SOCIAL

- **Average number of input material required:** 500 plastic bottle caps for the basket and 21 plastic bags (based on the market analysis).
- **Weight of discarded items:** 2.3 grams per plastic bottle cap<sup>66</sup> and 5.5 grams per plastic bag<sup>67</sup>. For the dashboard, weights are converted to pounds.
- **Dollars distributed to the community:** \$12.00 per hour for production (based on the minimum wage)<sup>68</sup> and \$0.05 per 100 bottle caps collected.

## ENVIRONMENTAL

- **Carbon emissions:** 6.0 kg, resulting with avoided carbon emission of 0.033 kg per plastic bag and 0.0138 kg per plastic bottle cap.<sup>69</sup>
- **Water use per product:** 0.5 gallon per bowl and 1.0 gallon per wastebasket. Water for operations will be sourced from *Sure We Can*'s rainwater catch system.
- **Electricity use per product:** 2.6 kWh per wastebasket, which includes electricity for the oven, paper shredder, injector and extruder. No electricity used for the bowl.
- **Emissions per product:** Based on New York City's 2015 emission factors for electricity<sup>70</sup>, each wastebasket will produce 0.68 kg of CO<sub>2</sub>-equivalent emissions.

## ECONOMIC

- **Sale prices:** \$35 retail for the wastebasket and \$33 retail for the bowl.

# OUTPUTS

The inputs from the financial model were used as the basis for the Triple Impact Dashboard tool. The following are example outputs that can be generated using the dashboard. These outputs are calculated under the scope of a five-year period.

OUTPUTS			
Impact	Metric	Wastebasket	Bowl
Social	<ul style="list-style-type: none"> <li>Dollars distributed to the community through hourly wages and incentives</li> </ul>	<ul style="list-style-type: none"> <li>\$134,585</li> </ul>	<ul style="list-style-type: none"> <li>\$186,606</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>Waste diverted from landfill</li> <li>Equivalent passenger vehicles driven for one year</li> <li>Equivalent number of homes' annual electricity usage</li> </ul>	<ul style="list-style-type: none"> <li>2,713,000 bottle caps or 13,757 lbs</li> <li>7.34 vehicles</li> <li>4.98 homes</li> </ul>	<ul style="list-style-type: none"> <li>159,600 plastic bags or 809 lbs</li> <li>1.15 vehicles</li> <li>0.78 homes</li> </ul>
Economic	<ul style="list-style-type: none"> <li>Revenue generated</li> <li>Net present value</li> </ul>	<ul style="list-style-type: none"> <li>\$176,393</li> <li>\$90,401</li> </ul>	<ul style="list-style-type: none"> <li>\$230,416</li> <li>\$49,545</li> </ul>

Figure 51: Triple Impact Dashboard Outputs

# 12 // IMPLEMENTATION

This section outlines the recommended steps for *Sure We Can* to launch a social enterprise that creates wastebaskets from bottle caps. The implementation plan covers a timeframe of approximately six months. Given the scope of the capstone team's project, the product design recommendations that have been provided in this remain general. Until a physical prototype has been created, the desirability of specific product features is difficult to test. As such, the team highlights the importance of gathering feedback from potential customers throughout the implementation phase of the enterprise and beyond. This feedback should be used to adjust the product design in terms of size, color, and shape, to satisfy customer demands.



**Contact Partners with Machinery Expertise:** Determine if individuals or organizations that have previously built Precious Plastic, or similar machines, can provide support in building the machines. Potential contacts include Dave Marin from Parsons, who has experience building and using the Precious Plastic machines. The team also recommends other Precious Plastic community members in the Northeast U.S., SheWeld, and members of the Brooklyn Metal Works network.



**Apply for Funding:** Initiate funding application process to ensure sufficient initial capital. Consider all five suggested funding opportunities outlined in the framework but focus on the prioritized recommendation.



**Build Machines:** Acquire or build the necessary machines and equipment through partnerships or direct funding. Create a dedicated workshop and storage space. Ensure the necessary utilities are available.



**Set Up Bottle Cap Collection and Sorting Scheme:** Create incentives for canners to begin collecting and sorting bottle caps. Initiate a test phase for collecting and sorting bottle caps. Iterate the scheme as needed to ensure efficiency of existing operations and the new initiative.



**Provide Training and Engagement:** Make resources available to support canner training, either through Precious Plastic videos or a training partner.



**Create Prototype:** Create the first versions of the wastebasket.



**Contact Potential Customers:** Engage with potential customers, using the initial prototype to solicit feedback on the product's features and specifications. Adjust design as necessary.



**Upgrade Website:** Update website to include information on the new initiative and product. Set up an online store on the website to ensure products can be monetized before *Sure We Can* reaches agreements with retailers.



**Launch Marketing:** Use social media, promotional videos, advertisements, product tags, and local news outlets to draw attention to the new initiative and product.



**Contact Retailers:** Set up meetings with local retailers to show the product and establish their interest in carrying it in their stores. Make product changes if necessary according to feedback.



Figure 52: *Sure We Can's Lot*  
Source: *Sure We Can*, 2017<sup>71</sup>

# 13 // CONCLUSION

The capstone team created a business plan to determine whether, and in what form, *Sure We Can* could pursue a social enterprise that turns discarded materials into valuable products. The team used insights from its upcycled and recycled product market analysis to evaluate various product options. Ultimately, two suitable products were established as recommendations for *Sure We Can* to pursue. These include a wastebasket made from bottle caps and a bowl made from plastic bags. Based on these findings, the team created product, operations, and marketing plans. The two recommended products were further evaluated using a financial model and triple impact dashboard. These are available to *Sure We Can* as tools to plan the business and make key decisions in line with their triple impact goals.

It is important to highlight that the wastebasket was found to be the most suitable product option, both in terms of the product itself and its market opportunities. Therefore, the team recommends *Sure We Can* prioritize this product and pursue necessary partnerships to ensure the viability of its production process. Securing a grant in the early stages of the enterprise launch is crucial. If funding opportunities do not materialize, the crocheted bowl serves as an alternative option. However, the market opportunity for the latter product is certainly less favorable than that of the wastebasket. The team acknowledges that there are inherent risks associated with the financial assumptions that underpin this business plan. As such, the team recommends pricing and related decisions should be finalized once a prototype has been created and clearer insights on the production process have been gained.

While the launch of a social enterprise is an exciting and feasible opportunity for *Sure We Can*, it will require extensive resources. Both time and capital are necessary to maintain the projected sales and ensure sufficient marketing efforts are undertaken. Similarly, efforts will be required to sell and distribute products, regardless of whether products are sold online or through retailers. Furthermore, the successful implementation of this business plan requires a project manager. The team recommends that an employee or volunteer dedicate at least several hours per week to the project.

The capstone team, in collaboration with *Sure We Can*, set out to create a social enterprise that embodies the three pillars of sustainability. Through extensive research, analysis, and stakeholder engagement, the team concludes *Sure We Can* can indeed meet these goals. In finding ways to repurpose materials and reduce waste sent to landfills, the enterprise would contribute to one of New York's largest environmental problems. Similarly, creating a self-sustaining enterprise would enable *Sure We Can* to empower women that demonstrate a deep appreciation and sense of belonging to its community. The team is thankful to have been given the opportunity to work on this project and sincerely hopes its findings can support *Sure We Can's* special community.



# 14 // REFERENCES

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