

Doughboyz: Cooking up a Sustainable Plan for Community Events

IQP Final Project Report

Prepared by

Hannah Boucher Harrison Kyriacou Matthew Guarneri

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Project Sponsor Justin Amevor DoughBoyz Benefit Corporation



DoughBoyz: Cooking up a Sustainable Plan for Community Events

Final Project Report

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By:

Hannah Boucher

Harrison Kyriacou

Matthew Guarneri

Date:

March 4, 2021

Report submitted to:

Justin Amevor

DoughBoyz Benefit Corporation

Professor Laura Roberts

Worcester Polytechnic Institute

Authorship

1.0 Introduction and Background	Authors	Editors
1.1 Introduction	Matthew Guarneri	Hannah Boucher
1.2 Food Insecurity	Hannah Boucher	Harrison Kyriacou
1.3 Resources currently addressing food	Hannah Boucher, Matthew	Hannah Boucher
insecurity	Guarneri	
1.4 DoughBoyz and Benefit Corporations	Harrison Kyriacou	Matthew Guarneri
1.5 Conclusion	Harrison Kyriacou	Hannah Boucher

2.0 Methodology	Authors	Editors
2.1 Introduction	Harrison Kyriacou	All
2.2 Breaking Down Costs and Drafting a feasible menu for DoughBoyz	Harrison Kyriacou	All
2.3 Developed Sustainable Packaging	Hannah Boucher	All
2.4 Developed a Framework to Hold Consistent Community Events	Harrison Kyriacou	All

2.0 Methodology	Authors	Editors
2.5 Piloted a Community Breakfast Event	Harrison Kyriacou	All
2.6 Ethical Considerations	Matthew Guarneri	All

3.0 Results and Deliverables	Authors	Editors
3.1 Cost Breakdown	Harrison Kyriacou	Matthew Guarneri
3.2 Menu	Harrison Kyriacou	Matthew Guarneri, Harrison Kyriacou
3.3 Packaging and Labels	Hannah Boucher	Harrison Kyriacou, Matthew Guarneri
3.4 Information Packets	Matthew Guarneri	Hannah Boucher
3.5 Sponsor List	Hannah Boucher	Harrison Kyriacou

4.0 Recommendations	Authors	Editors
4.0 Recommendations	Matthew Guarneri	Matthew Guarneri

5.0 Conclusions	Authors	Editors
5.0 Conclusions	Hannah Boucher	Harrison Kyriacou

Meet

OUR TEAM









IQP Final Report 1.0 Abstract

Abstract

Expanding the current food support structure is necessary to help end hunger.

DoughBoyz is a catering and food truck service in Worcester, MA that also hosts community breakfast events for those in need. The goal of this project was to assist DoughBoyz to formulate a framework to hold consistent community events that aid in their mission. We developed a cost analysis spreadsheet, to ensure a sustainable pricing structure, established local partnership opportunities, designed information pamphlets, menus, and solicitation packets, and developed sustainable packaging that allows leftover food to be donated to local charities. We used the framework to pilot a community breakfast event that was attended by over 200 people.



Executive Summary

Introduction

Food insecurity is a pressing challenge that many individuals face, especially with the recent Covid-19 pandemic that caused job loss and economic hardships for individuals who now rely on food support. Hunger vastly increased during the pandemic and is slowly declining to pre-pandemic percentages, but pre-pandemic levels are still unacceptable. More actions need to be taken to combat hunger in our communities.

In the food support structure, there are many people looking to make a positive difference and reduce food insecurity in their community. DoughBoyz is one such organization with their mission to end hunger and support members of their community, especially those who are underrepresented. Their Community Breakfast Event structure allows for their profitable catering and food truck business to be reinvested into providing food for those who need it most. This project will analyze DoughBoyz' current business model to create a framework for holding consistent community breakfast events.



Project Goals and Objectives

The primary goal of this project was to assist DoughBoyz in developing a framework for charitable events that included sustainable packing, a feasible menu, and community partners that support their mission in combating hunger in Worcester. The primary objectives of this project were to:

- Create a sustainable menu for DoughBoyz to use for long term sales for optimal revenue generation.
- Develop sustainable packaging for DoughBoyz that allows for eligible food donations.
- Create a framework for DoughBoyz to hold consistent Community Breakfast events
- Pilot a Community Breakfast using the framework.

Development of Methodology

To complete our objectives for this project we focused on the current operations of DoughBoyz and where they had opportunities to grow. To achieve this, we broke down the costs of a community event with all the necessary price points. From this we formulated solicitation documents for local sponsorship breaking down the cost for donations that fulfill the needs for a community event. We also created a sustainable menu from the spreadsheet for DoughBoyz to use long term for the for-profit operations of the benefit corporation.

After these documents were created, we moved onto designing a label that coincided with the current packaging DoughBoyz was using. This label acted as a marketing tool and doubled as a protective seal with the necessary information for food donations. We interviewed Worcester Community Fridges (WCF) on the food safe guidelines for the labels to help DoughBoyz decrease their food waste through donations to local charities.

A framework for Community Breakfast events was composed for DoughBoyz to use consistently. We were able to pilot a community event using this framework and observed this event firsthand to collect data. This event was held at Worcester Polytechnic Institute (WPI) and involved college students and staff.



Deliverables

The DoughBoyz Community Breakfast Framework is the culmination of all our deliverables into one, easily accessible document. It combines all our other objectives such as, a definitive menu, a reliable sticker design for packaging, and a solicitation packet. This framework provides all the information, documents, and suggestions necessary to successfully run a Community Breakfast on a regular basis.

The first piece of this framework is the Magical Cost Analysis Spreadsheet (MCAS). It is an important tool for both the profit and non-profit sides of DoughBoyz' operations. It allows DoughBoyz to determine unit costs for products and estimate an average amount of revenue needed per customer to break even. MCAS was designed with the purpose of being helpful for DoughBoyz even as they grow. It is designed to be easy to use and edit particularly when changing key values such as person count, ingredient costs, number of products in a batch, and ingredient amounts required per batch. Changes made on one part of the spreadsheet will propagate to all other parts. This makes MCAS flexible as DoughBoyz hosts different events with different size requirements or any number of variable factors.

The next item of the framework is a feasible menu. Using the MCAS, we estimated the cost for DoughBalls, DoughCakes, and fruit cups. This deliverable also included a draft of a visually appealing design. A consistent menu is needed for everyday sales of the for-profit side of DoughBoyz.

If there is any extra food after an event, DoughBoyz needs a way to safely donate leftover food to pantries or other organizations. It was determined that the protocol for food donations

required a sealed package, clear distinction of what is inside the package, an ingredient list, and a date made. To accommodate these requirements, we designed a sticker label that can be placed on food donation packages. At the bottom there is a brief ingredient list to clearly identify what was used to make the food. Including this information on the label will allow DoughBoyz to donate leftover food to shelters, food pantries, and to anyone who is hungry. This sticker doubled as a seal to prevent any tampering with the product.

To help fund community events, DoughBoyz needs to inform people about their company and mission. To accomplish this, an informational packet, a sponsorship request document and a thank you letter were created and used during this project. These documents contain an overview of the mission of DoughBoyz, as well facts and figures on hunger and food insecurity. They also outline the price of running a Community Breakfast for various amounts of people and include information on how one can become a sponsor.

Using these information packets, we reached out to several local organizations to see if they would help DoughBoyz hold community events. While currently not very large, this list compiles all the sponsors that have offered advice, support, and donations to DoughBoyz during our project. Each sponsor has expressed interest in working with DoughBoyz again in the future and agreed to join the list for future correspondence. This list is intended to lay a groundwork of contacts for DoughBoyz to be able to find more sponsors and expand the list.

Recommendations

- We recommend DoughBoyz adjust this framework to fit their needs as it is not a permanent plan of action.
- When selling at WPI and once affordable, we recommend that DoughBoyz purchase a
 point-of-sale system that optimizes school specific food credits, such as GoatBucks or meal
 swipes.
- We recommend DoughBoyz continue to work on the DoughCart food truck so that it is mobile.
- When DoughBoyz is ready to hire again Justin should reach out to Legendary Legacies.
- We recommend that DoughBoyz use volunteers through WPI FWS (Federal Work Study) students on campus as well as Greek Life.
- As DoughBoyz continues to grow we recommend buying labels for their packaging in bulk orders outside of WPI's services. Stickermule was one company we researched that offers great customizable stickers and labels that can be sourced in bulk that are cost effective long term.
- We recommend DoughBoyz reorganize their company information in their Google Drive.

Conclusion

Hunger is a challenge that many people face daily and is a fight that no one person can combat on their own. However, DoughBoyz and their mission is committed to work and serve their community in Worcester, MA. Through our networking with sponsors, compiling of product and labor costs into MCAS, and the various informational and promotional materials, we successfully piloted and ran a Community Breakfast event with DoughBoyz. Using our framework, we are confident that DoughBoyz can continue to serve in the fight against hunger for years to come.

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1.0 Background Information

1.1 Introduction

Our project focused on developing a framework for DoughBoyz to hold consistent community events. To accomplish this goal, we first collected background information on a variety of things to help us better understand the situation. These background materials are laid out in the following sections and address the following topics:

- 1. What food insecurity is and the local and national data
- 2. The resources currently addressing food insecurity and hunger both in Worcester and across the country
- 3. What DoughBoyz is and their mission

This research left us with a better understanding of the direction we wanted to take with the project and the best way to accomplish our goals to help DoughBoyz be a successful business and charitable organization for the community.

1.2 Food Insecurity

Imagine having to choose between buying groceries for the next week and paying your monthly rent. For more than 38 million Americans, this is the reality they face daily (Feeding America, 2021). Food insecurity is defined as a lack of consistent access to enough food to let every person of a household lead an active and healthy life (Feeding America, 2021). Despite

global programs to end hunger, there is still a significant amount of people left without any food.

Many households with children are statistically more likely to be affected by food insecurity and the effects that come with it.

National food programs in the United States such as Feeding America are committed to ending the hunger that this nation faces each day. Feeding America is a national organization implementing food banks and support hubs at the county level. Other ways of tackling food insecurity are local food pantries, community fridges, and local charities.

Despite these vast measures and programs many households are still without food. This can be due to the inequality of representation within communities not receiving the help that they deserve. Recently due to the Covid-19 pandemic, job loss and hardship fell upon many households. This pandemic was another compounding challenge that only added to the stress of these households struggling prior to the financial effects of Covid-19. Many unemployed households turned to community food pantries for assistance. With a significant increase in hunger, the current food support structure was unprepared for the long-term effect the pandemic had.

In 2020, at least 60 million people received charitable food assistance (*Charitable Food Assistance Participation*) which is an increase of 50% from 2019. Map the Meal Gap has served as the primary reference for Feeding America's food insecurity data for ten years to provide the public with accessible information and awareness. A Boston based non-profit called Project Bread focuses on food insecurity and its effects on Massachusetts households. Massachusetts had a recorded average of almost 22% of households with children deemed "food insecure" as of December 2021 according to data collected by Project Bread (*Hunger & Food Insecurity in*

Massachusetts / Project Bread, n.d.). In 2019 a student-led project surveyed students at Worcester Polytechnic Institute (WPI) to investigate food insecurity rates on campus. From their findings, an overall 24.3% rate of food insecurity was recorded among the students (Renfro et al., 2019). The data from WPI was compared to data from another study that observed 4-year college students nationally and just in Massachusetts. Figure 1 shows the data collected from the 2019 WPI data comparison. The data shows that a significant amount of college students struggle to eat sufficiently. It found that 35% of all college students face food insecurity and nearly that in Massachusetts specifically. The study also found that nearly a quarter of WPI students deal with food insecurity. Food insecurity is a serious problem across the country and on college campuses.

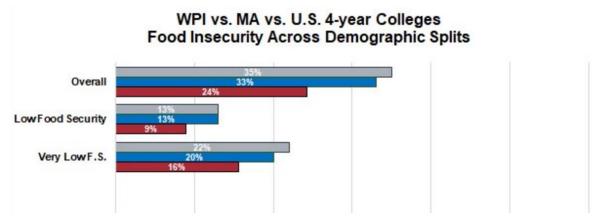


Figure 1: Collected survey data of WPI students compared to 4-year colleges nationally and in Massachusetts (Renfro et al., 2019)

While there are many specific, individual causes for food insecurity, the two most general culprits are financial instability (Feeding America, 2021), and being in what is known as a "food desert" (Sullivan, 2021). Financial instability can be brought on by several things. It is impossible to talk about food insecurity without discussing how it disproportionately affects low-income communities and communities of color. In fact, in 2010, US Census data showed that

40% of food insecure households in the United States are below the Federal Poverty line (Chen. Kaczmarek. Ventola, 2013) with nearly 50% being households of color (Chen. Kaczmarek. Ventola, 2013). Meaning that nearly 60% of food insecure households are above the poverty line, this shows that hunger is a problem for people even if they are deemed economically stable. The COVID-19 Pandemic in March of 2020 only worsened this issue with an increase in unemployment, layoffs, illness, and a widespread disruption of supply chains (Feeding America, 2021). In Worcester, this is especially important due to its high proportion of immigrant, refugee, first generation, and ethnic minority communities, as well as a high percentage of college students; another group that is disproportionately affected by food insecurity (Sullivan, 2021).

Beyond not being able to afford nutritious food, another contributing factor to food insecurity is having access to nutritious food. A "food desert" is defined as an area where a large amount of the population has limited access to grocery stores or other supermarkets (Sullivan, 2021). It is estimated that approximately 23.5 million Americans live in an area that is either not within a reasonable distance to food commerce locations or lacks a store with nutritious food at a reasonable price (Sullivan, 2021). With Worcester being a mostly urban environment, fresh produce must be transported from outside the city to various stores and farmers markets. Only about 4% of farms are located within 11 miles of Worcester proper (Chen. Kaczmarek. Ventola, 2013). For many smaller farms outside this radius, the cost of transporting their goods to Worcester is often more than they make through selling in the city, causing many to instead turn to selling in Boston (Chen. Kaczmarek. Ventola, 2013). This transportation issue was only exacerbated by the COVID-19 Pandemic which completely broke down the supply chain causing an even bigger shortage of fresh produce (Parekh et al., 2021). This ultimately caused an

increase in the pricing of fruits and vegetables which made it harder for already food insecure families to obtain nutritious foods. Furthermore, put more strain on many current support structures as many families struggled with financial loss along with the inability to obtain government assistance in time. It was estimated that 140 million people globally would fall into poverty at some point during the pandemic (Swinnen & McDermott, 2020).

Even with the unprecedented COVID-19 Pandemic making things worse, food insecurity is not a new issue. For that reason, there are already many systems in place both in Worcester and around the United States in general that are designed to fight against food insecurity and provide stability to those in need.

1.3 Resources addressing food insecurity

Many children rely heavily on school meals as a source of food. Public schools offer both breakfast and lunch options for kids. The National School Lunch program (NSLP) provides free lunches to children in households at or below 130% of the Federal poverty line. The NSLP provided, "low cost or free lunches to 29.6 million children each school day in fiscal year (FY) 2019" (USDA ERS - National School Lunch Program, n.d.). These meals are government mandated to be of a certain nutritional value to support the health of the growing youth.

Thankfully throughout the pandemics, children who relied on these meals were able to pick them up or have them delivered. School lunch delivery programs ensured that these children were able to get the food they needed both during the school year and summer. In the spring of 2021, the USDA announced they will continue reimbursement of schools for free meals regardless of

household income (Tadayon, n.d.). This reimbursement will cover the academic 2021-22 year and extend until June 2022. Political advocates are pushing for a permanent change to make all school meals free starting 2022-23. This initiative will decrease the stress of food insecure households now that their children are guaranteed two meals a day.

Emergency provisions can also be accessed through food pantries and charities. Food pantries are supporting communities nationwide in hopes of helping those who struggle to find their next meal. The Worcester County Food Bank (WCFB) supports local food pantries by distributing food to them. The organization distributes almost 6 million meals annually (*Worcester County Food Bank, Inc. | Feeding America*, n.d.) through the network of 115 local food pantries. In March 2020 alone the WCFB distributed 590,781 meals for 38,200 people through local donations (*You Helped Distribute 590,781 Meals in March.*, n.d.). Of these 38,000 people, almost 6,000 people were seeking assistance for the first time. This only shows a portion of people who experienced the effect of the pandemic in its early stages. As the pandemic progressed, more job loss and hardship fell upon many households in Worcester leading to an increase in hunger.

Another local nonprofit organization, Worcester Community Fridges (WCF) has fridges and food pantries accessible 24/7 to provide food for the community. Woo Fridges' goal is to empower and build, "...is empowerment and building long term relationships with community members" (*Home*, n.d.). The percentage of food insecurity in Worcester County was at 8.2% in 2019 according to Feeding America (*Hunger & Poverty in Worcester County, Massachusetts / Map the Meal Gap*, n.d.). With a significant percentage of the Worcester population identified as food insecure, it is necessary that families have access to fresh food daily. Although there is no

current data on Worcester County this percentage has gone up in Massachusetts as a whole since the start of the Covid-19 pandemic putting more stress on families to find food (*Hunger & Food Insecurity in Massachusetts | Project Bread*, n.d.). The fridges are a take what you need and leave what you can philosophy. This program is to help the community lift each other up through mutual aid and not charity (*Home*, n.d.). With four locations, these community fridges accept fresh produce, eggs, breads, and frozen meals. The WCF program creates access for community members to donate or take fresh food. Woo Fridges ensures accessible, nutritious food is put into the hands of those who need it most. An important factor in decreasing hunger is community engagement. The Worcester Community Fridge program creates just that in hopes of lowering the number of people who are food insecure in Worcester, MA.

3.4 DoughBoyz & Benefit Corporations

DoughBoyz is a local food startup founded by Justin Amevor in 2016. Amevor got the idea for DoughBoyz his freshman year of college and started by selling pancakes out of his dorm room. DoughBoyz has grown into a catering business that makes breakfast dishes for paying customers. In addition to the normal business practices of generating revenue, Justin wants to use DoughBoyz to raise awareness and fight hunger in Worcester.

The long-term vision Justin Amevor has for DoughBoyz is to operate multiple food trucks, called DoughCarts, that can sell breakfast dishes to customers around Worcester (J. Amevor, personal communication, November 18, 2021). The DoughCart can also efficiently transport food to people in need since it is mobile. While the DoughCart is undergoing repairs,

DoughBoyz has been operating on a catering business model while occasionally being able to run charitable events such as the Community Breakfast Series (*DoughBoyz*). Community Breakfasts are events where the company will give back to the community by giving out free food in Elm Park (Jandrow, 2020) or catering for a food pantry.

To sustain this balance between running a for profit business and accomplishing their



Figure 2: Justin Amevor and the DoughCart

charitable mission, DoughBoyz is structured as a benefit corporation. A benefit corporation is a type of legal entity that is somewhere in between a for-profit and non-profit corporation. Benefit corporations were signed into Massachusetts law in 2012 (Massachusetts Benefit Corporation Act, 2012) making it a relatively new pathway that entrepreneurs can explore. The key characteristic of benefit corporations is a "broadened fiduciary discretion" (Lincoln & Hoag, 2013). This means that the people who run the company can focus on achieving more than just

profits and make decisions that might not be the best in terms of generating revenue but advance their public benefit mission.

1.5 Conclusion

Food insecurity is a reality that millions of people across the United States face and was only worsened by the pandemic. For those in the Worcester community the pandemic affected many households with abrupt job loss and a new stress of finding their next meal. With the help of organizations like the Worcester County Food Bank and Worcester Community Fridges, thousands of people can get assistance, but it is not enough.

Worcester needs new companies like DoughBoyz to assist in the areas where food pantries might be falling short. The unique business model of DoughBoyz allows them to give back to their community and grow financially. Our project created a framework for DoughBoyz to hold regular, charitable events and programs where they will give hot prepared food to those in need. We accomplished this by addressing several important business components of DoughBoyz. We created a feasible menu to allow the company to both sell their products and show their offerings at community events. We then drafted sustainable and eco-friendly packaging that will be compliant with regulations allowing DoughBoyz to donate leftover food from events. We also determined potential sources for volunteers or food ingredients for community events. Combining these features, we developed a sustainable framework that can be used to hold community food events regularly.

2.0 Methodology

2.1 Introduction

In this section, we will detail the methods used to achieve our project goal of developing a framework for charitable events that includes sustainable packaging, a feasible menu, and community partners that support DoughBoyz's mission in combating hunger in Worcester. The four main objectives completed were:

- Drafted a menu that is sustainable for DoughBoyz
- Developed sustainable packaging
- Developed a framework to hold consistent community events that is effective for DoughBoyz.
- Piloted a community breakfast event

Each objective includes a deliverable that advances the overall framework. To accomplish this, we used numerous research methods including interviews, research, shadowing/observation, qualitative analysis, brainstorming, and finally multi-criteria decision analysis. The rest of this section is structured according to each objective and will describe the corresponding tasks/method.

2.2 Breaking Down Costs and Drafting a feasible menu for DoughBoyz



Figure 3: Stock Menu Design

A feasible menu includes both a visually appealing design and appropriate prices for each of the items. To start, we researched different menu designs and evaluated effective and ineffective elements from a design perspective. We then used the references to construct a menu design. Figure 3 shows a stock menu collected from Google Images used as inspiration.

To select appropriate prices, we first compiled all ingredients for each item into a spreadsheet. We then did calculations and conversions to get each item into a standard mass measurement. This was the first challenge we ran into as the recipe had all items in volumetric measurements. This was a problem because when you buy ingredients in bulk it is usually based on their mass, not their volume. Therefore, we needed to convert the volume measurements of ingredients from the DoughBoyz' recipes into mass measurements. We used aquacalc.com to

find the unique volume to mass conversion rates for each item and saved these rates into the spreadsheet. Multiplying the recipe volume measurements by these rates gave us the mass of each ingredient needed.

Converting each measurement into consistent units allowed us to collect price data for each item from the food suppliers that DoughBoyz uses. We summed the ingredients needed for each item, based on the amount of people anticipated to be served, and found the closest bulk quantity for each item to get the most accurate price. Using this data, we calculated the unit costs for each item's ingredients.

We then factored in other costs such as labor, packaging, and sides such as fruit cups. We followed a similar process to calculate the cost for all these items per customer. We used this per customer cost in addition to the ingredient cost to determine prices for each item.

2.3 Developed sustainable packaging

To determine the most effective and sustainable packaging, we researched different options for packaging types including paper wraps, bakery boxes, and standard paper takeout containers. We compared prices, flexibility, and environmental sustainability of different custom packaging suppliers. Along with these criteria, it was important that the packaging followed guidelines that allow any extra food from events to be donated to either food pantries or the Worcester Community Fridges. The guiding questions to this semi-structured interview can be found in Appendix A.

2.4 Developed a framework to hold consistent community events that is effective for DoughBoyz

To develop a framework for DoughBoyz to hold community events, we focused on a sustainable method for securing monetary and in-kind donations, such as the ingredients to make and distribute the food. To hold consistent events, donations were required to make and distribute food. To acquire donations, we created a sponsorship document, brochure, and thank you letter for sponsors. These documents presented information about the mission of DoughBoyz, the details of a community breakfast, and a cost breakdown to sponsor an event. In addition, for potentially larger community events in the future, volunteers and a larger staff will be needed.

We approached several local organizations with these materials to see if they would be interested in partnering with DoughBoyz either for food donations or with volunteers. These organizations include: WPI Administration, WPI Student Activities Office, WPI Student Government Association, Chartwells, BJs, The Worcester Red Sox, Legendary Legacies, Hanover Insurance Group, Fraternities and Sororities.

2.5 Piloted a Community Breakfast event

Using our informational brochure and sponsor document, Dean Gregory Snoddy agreed to sponsor a Community Breakfast event at WPI on February 24th, 2022, as part of the larger WeConnect mental health awareness event. To serve more students, we also helped DoughBoyz

secure other individual donations as well as food donations from Chartwells and the WPI Library.

Once the funding was secured, the cost breakdown spreadsheet allowed DoughBoyz to determine what was needed to buy for the event and in what quantities. We observed DoughBoyz staff during this process to collect information on ingredient quantities and prices. Using this data, we analyzed the cost breakdown spreadsheet and made necessary changes.



Piloting this event allowed us to observe the cooking process as well. During this phase, we collected data on cooking time and limitations as well as further refining the necessary ingredient quantities as needed per batch.

Finally, during the event we further observed the process of packaging and handing out food. We also collected volunteer survey responses about what people thought about the product, the serving, and the price they would be willing to pay for it.





2.6 Ethical Considerations

This project was approved by the WPI IRB record number IRB-22-0335. The script is what we will use to get verbal consent from participants in our research:

"This is a joint project between WPI and DoughBoyz. We are conducting interviews to determine the best ways for DoughBoyz to help address food insecurity in Worcester. Your participation in this interview is completely voluntary and you may withdraw at any time. Your answers will remain anonymous unless we receive consent from you. If you wish to remain anonymous, no names or personal identification will appear on any of our reports. This interview will take approximately __ minutes. Do you have any questions before we begin?"

3.0 Results and Deliverables

The DoughBoyz Community Breakfast Framework is the culmination of all our deliverables into one, easily accessible document. It combines all our other objectives such as, a definitive menu, a reliable sticker design for packaging, and a solicitation packet, all of which are talked about in detail in this section. This framework provides all the information, documents, and suggestions necessary to successfully run a Community Breakfast on a regular basis. Its effectiveness is demonstrated by the Community Breakfast we ran. About 160 DoughBalls, 50 DoughCakes, and 80 fruit cups were made for the event. By the end of the first hour, 90% of the prepared food had been served, and by the end of the second hour, there was nothing left. We estimate that around 250 people came to the event throughout the entire three hours, all of which seemed to enjoy the event.

3.1 Cost Breakdown

The Magical Cost Analysis Spreadsheet (MCAS) is an important tool for both the profit and non-profit sides of DoughBoyz' operations. Images of the various parts of MCAS can be viewed in their entirety in Appendix C. After compiling all the cost and recipe data into MCAS, we were able to perform analysis to determine unit costs for products and estimate an average amount of revenue needed per customer to break even.

MCAS was designed with the purpose of being helpful for DoughBoyz even as they grow. It is designed to be easy to use and edit particularly when changing key values such as

person count, ingredient costs, number of products in a batch, and ingredient amounts required per batch. Changes made on one part of the spreadsheet will propagate to all other parts. For example, changing the event size or amount of DoughBalls to be cooked will update the price recommendations and the ingredient amount suggested. This makes MCAS flexible as DoughBoyz hosts different events with different size requirements or any number of variable factors.

3.2 Menu

Using the cost breakdown spreadsheet, we estimated the cost for DoughBalls, DoughCakes, and fruit cups. A consistent menu is needed for everyday sales of the for-profit side of DoughBoyz. These prices were determined by using the current market price of the ingredients to make these menu items. DoughBoyz' catering business made a wide variety of food to order however, for their day-to-day sales it was not sustainable to have a plethora of inventory that led to food waste and loss of potential sales. After the cost was calculated we compared this data to the data collected at the Community Breakfast. We then observed and concluded which items should be consistently sold to make long term profit. Attached in Appendix D, is the menu created along with the corresponding calculated sale prices of the product.

3.3 Packaging and Labels



Figure 4: Designed Labels

Based on input from our sponsor, we decided to focus on creating custom labels instead of custom packaging for pricing reasons. We then began looking at a few different websites to get pricing. One of our ideas was to use different colors to denote different menu items but due to the variety of DoughBalls and DoughCakes we simplified the colors to just two: red for DoughBalls and blue for DoughCakes. We concluded that for proper packaging a sticker that acted as a seal was the best option. This sticker was more cost effective to use with their current biodegradable boxes than reinventing a personalized package system. After talking with Julia Karpicz from Worcester Community Fridges (WCF) we created drafts of labels with ingredient

and allergy information. Based on the interview conducted with WCF, we determined the protocol for food donations required a sealed package, clear distinction of what is inside the package, an ingredient list, and a date made. We designed a colorful distinctive label (Figure 4) that was used with the current biodegradable boxes DoughBoyz already had in stock. At the bottom there is a brief ingredient list to clearly identify what was used to make the food. Including this information will allow DoughBoyz to donate leftover food to shelters, food pantries, and to anyone who is hungry. This sticker doubled as a seal to prevent any tampering with the product. The label also includes a Quick Response (QR) Code that links to the DoughBoyz Linktree so customers can easily access the DoughBoyz website, social media accounts, and information about hunger. Based on the different quotes for sticker printing services, we decided to utilize WPI printing services to print the labels in bulk.



This sticker provided a clear distinction between products while showing what was inside the package. The sticker is colorful, legible, and the scannable QR code allowed people to get more information about DoughBoyz. Along with providing the ingredient information and madeon-date on the sticker this authorized our sponsor to donate to charitable organizations.

3.4 Information Packets

Appendix B is an image of an informational pamphlet about DoughBoyz. This contains an overview of the mission of DoughBoyz, as well facts and figures on hunger and food insecurity. The final two pages of the pamphlet outline the price of running a Community Breakfast for various amounts of people and includes information on how one can become a sponsor. This pamphlet is intended to be available during a Community Breakfast or during business hours to be looked at by anyone interested in supporting DoughBoyz.

Appendix F is of the Sponsorship Proposal Document. This document is intended to be given to potential sponsors and outlines much of the same information as in the pamphlet, but in a more professional manner. This document also includes the amounts of ingredients that could be donated instead of money, and more clearly defines everything that goes into a community event.

Appendix G is a picture of a Sponsorship Thank You letter. This letter would be given to any sponsors that support DoughBoyz in a significant way. It is important to maintain a connection with any sponsors as well as guarantee that a sponsor knows their contribution is appreciated and going towards the mission of fighting hunger.

3.5 List of sponsors

While currently not very large, this list compiles all the sponsors that have offered advice, support, and donations to DoughBoyz during our IQP. Each sponsor has expressed interest in working with DoughBoyz again in the future and agreed to join the list for future correspondence. This list is intended to lay a groundwork of contacts for DoughBoyz to be able to find more sponsors and expand the list.

For our initial sponsor, we reached out to Worcester Polytechnic Institute (WPI) to gain local support. In partnership with WPI, the commercial catering service Chartwells donated ingredients, and offered advice on how to get the DoughBoyz food truck on campus regularly. WPI also provided a venue for the Community Breakfast on Academic Advising Day as part of their efforts to address the mental health conditions of students.

IQP Final Report 4.0 Recommendations

4.0 Recommendations

We recommend DoughBoyz adjust this framework to fit their needs as it is not a permanent plan of action. The Community Breakfast framework we developed for DoughBoyz will allow the organization to secure consistent sponsorship for events. Using the framework and list of sponsors Justin can secure funding for community events to decrease hunger in Worcester, MA. As time goes on and his mission spreads, local businesses are likely to help DoughBoyz and their mission to end hunger in Worcester. Our framework went under several iterations before a deliverable was finalized.

Once it is affordable, we recommend that DoughBoyz purchase a point-of-sale system that optimizes school specific food credits, such as GoatBucks or meal swipes. Based on our survey (Appendix H), 68% of students who answered would use GoatBucks or Bonus Points to purchase food from DoughBoyz. This would allow students to easily pay at the food truck as well as attract customers who may not have the traditional supporting funds.

We recommend DoughBoyz continue to work on the DoughCart so that it is mobile. Having a mobile truck allows for DoughBoyz to travel across the city of Worcester, MA to sell their products and spread their mission. Food trucks are very popular among college students, especially a benefit corporation that is not solely fixated on profits. DoughBoyz had some prior issues getting the food truck to run. It is imperative for DoughBoyz to have a working and reliable food truck. Once the food truck is running efficiently, they should visit WPI consistently,

IQP Final Report 4.0 Recommendations

but also the other 8 local colleges in Worcester, MA to generate sales and help college students in need.

When DoughBoyz is ready to hire again Justin should reach out to Legendary Legacies.

Legendary Legacies (LL) is a Worcester based organization that aids young men who were incarcerated assimilate back into a normal life. Their main focus is helping these young men find consistent job opportunities preferably in the local area. This could be a source of future employees for DoughBoyz as they continue to grow.

Apart from his employees, volunteers are an important part of DoughBoyz and their community breakfasts. We recommend that DoughBoyz use volunteers through WPI FWS (Federal Work Study) students on campus as well as Greek Life. Both of these volunteer sources are looking for opportunities for service hours and to positively impact their community. Although uncommon, corporate volunteers are another source of charitable help looking to give back.

WPI has a printing service that helped Justin with printing labels, brochures, and sponsorship materials. The products were of great quality that provided clear information about DoughBoyz. As DoughBoyz continues to grow we recommend buying in bulk orders outside of WPI's services. A great source for more labels could be through Stickermule. Stickermule offers great customizable stickers and labels that can be sourced in bulk that are cost effective long term.

Organization is a crucial factor in keeping business operations running smoothly. We recommend DoughBoyz reorganize their company information in their Google Drive. At first it was quite difficult to navigate through the drive despite having numerous labeled folders. As the company grows and gains more records things can easily get lost in its current storage layout. It

IQP Final Report 4.0 Recommendations

could be a good short-term project to reorganize the file storage and clearly represent what is stored. This can be started by going through each folder and deleting unnecessary files that are deemed out of date and irrelevant. Then creating a folder for quick access to frequently visited files such as recipes or sales data. Once these files are done being used either delete them or have a specific archive file with a corresponding date as seen fit. This could greatly help Justin and his team find necessary information without wasting too much time searching for the correct file.

IQP Final Report 5.0 Conclusions

5.0 Conclusions

Ending hunger is a momentous task that no one person, organization, or government can do alone. However, any one person can make a difference and every little bit helps. The mission of DoughBoyz is a lofty one, and throughout this project, we have learned just how much effort goes into charitable events. Creating connections between different organizations when developing our sponsor list gave us some unique opportunities for collaboration. For example, we reached out to Legendary Legacies to ask about volunteers, but instead found that it could lead to DoughBoyz supporting the careers of previously incarcerated young men.



IQP Final Report 5.0 Conclusions

Through our networking with sponsors, compiling of product and labor costs into MCAS, and the various informational and promotional materials, we successfully ran a Community Breakfast event with DoughBoyz. Almost all the ingredient and utensil costs were covered by sponsors in some way. The venue was donated by WPI, and the entertainment was entirely volunteered and donated by individual groups. In total, DoughBoyz was able to serve around 130 DoughBalls, 50 DoughCakes, and 80 Fruit Cups to the WPI community. However, we believe more could have been served if there was more time to prepare and more food to serve. Using our framework, we are confident that DoughBoyz can continue to serve in the fight against hunger for years to come.



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Appendix A: Interview Questions for Worcester

Community Fridges and Legendary Legacies

Interview Goal: To understand the current food support structure in Worcester and in what ways DoughBoyz can contribute.

Verbal Consent for Recording: In addition to the verbal consent script from our Ethical Considerations section, we will ask: Are you comfortable with being recorded so we can re-listen to the interview and get a transcript?

Semi-structured Interview Questions:

- 1) What does your organization do?
 - a) For profit? Non profit?
 - b) Anything other than food?
- 2) Could you tell us more about your hours of operation and approximately how many people you serve in a given day?
 - a) Do you think there is a need for additional hours/services?
 - b) Do you think those attending would benefit if they had another resource to help them on off hours?
- 3) How much stress did the recent pandemic put on the organization?
 - a) Has the need ever stopped?

- b) Have resources run out? Come close?
- 4) Where do you see gaps in Worcester's food security support structure?
 - a) What do you see as ways to fill those gaps?
- 5) Do you think community awareness would help combat food insecurity?
 - a) Have the local government/leaders been involved in the situation?
 - b) Do you think there is a negative stigma around the words "food pantry"?

Would there be more involvement if there was not?

Appendix B: DoughBoyz Promotional Pamphlet







Appendix C: MCAS Spreadsheet

Size of event:	150														
loughballs:	150				Doughcakes	50				FruitCups:	100)			
Doughballs	(150 Doughballs)				Doughcakes	(50 Dougcakes)				Fruit	(100 FruitCups)			
ngredient	Amount I	Jnit	Price / Unit Total		Ingredient	Amount	Unit	Price / Unit	Total	Туре	Amount	Unit	Price / Unit	Total	
our	9.5175	Pounds	\$0.50	\$4.7588	flour	2.478515625	pounds	\$0.50	\$1.24						
nstant Yeast	0.01239257813	Pounds	\$18.48	\$0.2290											
Sugar	0.001147460938	Pounds	\$1.00	\$0.0011											
pepper	0.000771484375	Pounds	\$15.73	\$0.0121											
cheese	1.5	Pounds	\$2.80	\$4.2000											
eggs (per egg)	150	eggs	\$0.10	\$15.0000											
parsley	0.0005517578125	ounds	\$48.00	\$0.0265											
dobo	0.001285807292	ounds	\$2.29	\$0.0029											
Bacon	6	ounds	\$6.88	\$41.2800											
Chopped kielbasa	6	ounds	\$5.57	\$33.4200											
					Confectioners Sugar	0.01936340332	pounds	\$0.84	\$0.02						
					baking powder	0.002756754557		\$3.50	\$0.01						
					kosher salt	0.008612738715	pounds	\$2.33	\$0.02						
					milk	4.204101563	pounds	\$0.38	\$1.60						
					unsalted butter	0.048828125	pounds	\$5.00	\$0.24						
					pure vanilla extract	0.0007180107964	pounds	\$40.00	\$0.03						
					large egg yolk	0.390625	pounds	\$3.00	\$1.17						
					large egg white	1.339285714	pounds	\$1.48	\$1.98						
					cream of tartar	0.0001996358236	pounds	\$6.00	\$0.00						
										Raspberries	. 4	packages	\$4.88	\$19.52	
										Blueberries	2	2 packages	\$4.48	\$8.96	
										Blackberries	1	packages	\$5.84	\$5.84	
										Strawberries	3	2 packages	\$4.00	\$8.00	
										Orange	1	bags	\$10.70	\$10.70	
OTALS:				\$98.93					\$6.31					\$53.02	
·			Unit Cost:	\$0.66				Unit Cost:	\$0.13				Unit Cost:	\$0.53	
			OTHE GOOD	40.00				OTHE GOOD	40.10				OTHE GOOD	40.00	
Other Costs					Summary of Costs										
	Amount U	Jnit	Price / Unit Total		Califfinally of Oosto										
abor (Cooking)		nours	\$15.00	\$240.00	Ingredient Costs	\$158.26									
abor (Selling)		nours	\$15.00	\$60.00	Other Costs	\$433.27									
Paper plate	150 i		\$0.27	\$40.00	2	V100.E1									
Paper box	150 i		\$0.43	\$64.77	TOTAL:	\$591.53									
Itensils	450 i		\$0.06	\$27.00	Cost / Customer:	\$3.94									
lapkins	150 i		\$0.01	\$1.50	2250 Odstorioi.	\$0.0									
Containers	100 1		45.51	Ţ1.00											
01110111010															
			TOTAL:	\$433.27											
	Otho	r Coete	/ Customer:	\$2.89											

Appendix D: Long term menu for daily sales



ENTREE

 DoughBalls
 Dough stuffed with your choice of Eggs, Bacon, or Sausage. Vegan Option available
 \$3

 DoughCakes
 Fluffy Buttermilk Pancakes
 \$3

Fruit Cup Fruit cups with raspberries, blueberries, blackberries, and strawberries



Dougcakes



Doughballs

SIDES	
EGGS	\$1.50
BACON	\$3
SAUSAGE	\$3
TURKEY BACON	\$3
BLUEBERRIES	\$1
GRAPES	\$1
STRAWBERRIES	\$1

DOUGHCAKE FLAVORS

\$1

Chocolate Chip, Strawberry, Cinnamon, Blueberry

DOUGHCAKE TOPPINGS

Whipped Cream, Sprinkles, Cinnamon, Carmel

DOUGHBALL OPTIONS

Bacon Egg & Cheese, Sausage Egg & Cheese, Egg & Cheese, Vegan

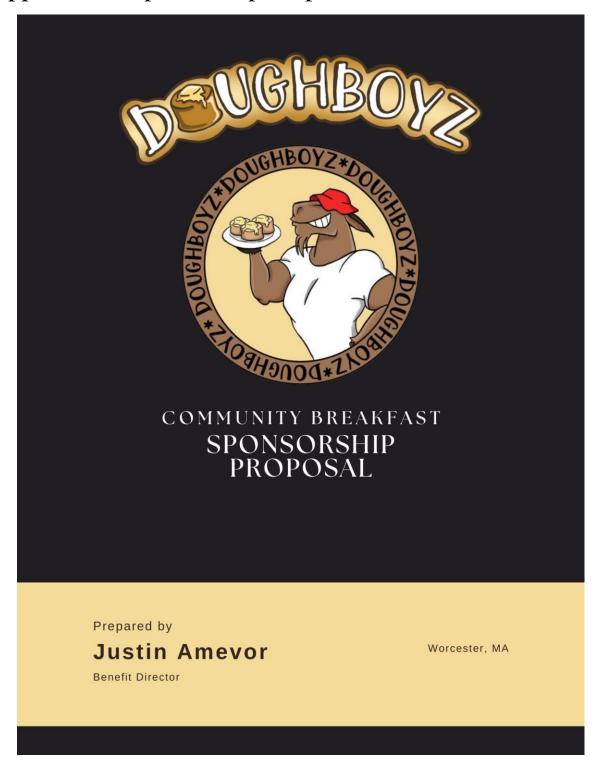


DRINKS	
APPLE JUICE	\$1.50
ICED TEA	\$1.50
BOTTLED WATER	\$1

Appendix E: DoughBoyz Labels



Appendix F: Sponsorship Proposal Document



Appendix G: Sponsorship Thank You Letter



[DATE]
Justin Amevor
DoughBoyz
[ADDRESS]

Dear [DONOR NAME],

Thank you so much for your generous donation to us. With your generous donation, we were able to provide [NUMBER] of nutritious meals and combat hunger on the front lines. Approximately 13% of the Worcester population faces hunger daily, many of which are children. Thanks to you, we can fulfill our mission of providing those in need with a basic human right and continue to educate the community about hunger. This effort truly takes an entire community! If you would still like to support the fight against hunger, the Worcester County Food Bank, Worcester Community Fridges, and other local food pantries are always in need of support, especially with the stresses of the pandemic. We are extremely grateful for your donation, and your support of the community of Worcester. [INSERT PICTURE/QUOTE FROM EVENT]

SINCERELY,

Justin AmevorJUSTIN AMEVOR
BENEFIT DIRECTOR



Appendix H: WPI Community Breakfast Survey

Questions

Thank you for taking this survey! The data collected from this is anonymous and is crucial for our IQP project findings. Description (optional)
How did you hear about the event? Short answer text
What did you get from DoughBoyz today? * DoughBall DoughCake Fruit Other
What type of DoughBall or DoughCake? * Short answer text
How was it? * Great!:) Good OK Not good Terrible:(Other

Would you get DoughBoyz again? Yes No Maybe Other
How do you feel about food trucks on campus? Love it! Doesn't matter to me Hate it. Other
If DoughBoyz was regularly selling food on campus would you buy from them? Yes No Maybe
If DoughBoyz had the option to pay with Goatbucks/Bonus Points would you use them frequently? Yes No Maybe Other