

**ASSESSING BUSINESS MODELS FOR THE
LOCAL FOOD MARKET IN THE PACIFIC
NORTHWEST**

by

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B.S., BRIGHAM YOUNG UNIVERSITY- IDAHO,
2012

A THESIS

Submitted in partial fulfillment of the requirements

for the degree

MASTER OF AGRIBUSINESS

Department of Agricultural Economics

College of Agriculture

KANSAS STATE UNIVERSITY

Manhattan, Kansas

2016

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ABSTRACT

Local foods is a growing market segment, and there are multiple businesses attempting to capitalize on the interest in buying from local producers. As consumer interest in local food continues to grow, businesses will be created to meet a growing demand. This research identifies areas in current customer segments in local foods that are not being serviced or are being underserved. Potential business models are then identified in order to service the identified customer segments.

One primary service gap that was identified in the research was that end consumers were not able to purchase local food per their definition of local food. Major retailers sell local produce and food items that were grown within the state boundaries, but few sell produce that is grown within the community.

A cost/revenue framework simulation was built to compare three different types of business models that could potentially fill the identified service gap in the target area of Washington State. After the simulation was performed, the models were compared on net present values in lowest feasible, expected, and best case scenarios. Factors such as imitability and scalability were also considered.

The three models were a micro-farming app and website, a CSA delivery and management service, and a non-profit community garden. The micro-farming site and app would allow producers and artisans, no matter the scale, to have an online marketplace to sell and trade food products. The CSA management and delivery model delivers CSA shares to customers while charging a delivery and management fee to the farm on which

the CSA is based. The non-profit community garden is a five-acre parcel with a water retention system and offers tiered services for garden management in King County.

Results suggest that even though each business model could potentially be feasible in the targeted areas, the most visibly promising model was the micro-farming website and app. Beyond the financial overview and analysis reported in the thesis, the business models could be ranked in a variety of ways according to an entrepreneur's interest. More importantly, there is no better time than now to start building a business model that services customer's interest in local food.

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ACKNOWLEDGMENTS

Thank you Heather, my best, and lifelong friend, who I was lucky enough to also marry.

Thank you for putting up with my late nights and long absences. Without your support, I couldn't have done this.

Thank you Don, for your inspired council to continue on with my education. Without you, I wouldn't have started this.

Thank you Mike Berg and Bill Reilly, for your professional support, the extended time away from the office, the time away during surgery, the financial support, and for the business data for multiple projects.

Thank you Dr. Peterson, for your continued patience and encouragement with this project. I couldn't imagine having a better tutor and mentor for academic research and writing. You have a gift for teaching and development.

Lastly, I want to thank my Savior for His Grace in getting me through these rough couple years.

Without Him, nothing is possible...With Him, all things are possible (Matthew 19:26).

DEDICATION

In Memory of Debby;

One who saw and always knew how to foster greatness in those around her. As a volunteer in her local 4-H chapter, she inspired youth to be leaders in their communities, masters of their own destinies, and never to sell themselves short. She inspired me to never give up on myself, my dreams, or my education. She taught me to be determined and dedicated to a good cause.

“Hard work, dedication, determination, and education are the tools to success. Life is too short to waste dreaming and hoping, life is meant to be doing.”

“The sky truly is the limit for those who want it enough to work for it.”

--Thank you, Debby! for being a mom to all of us.

CHAPTER I: INTRODUCTION

By the year 2050, the world population is expected to reach a little more than nine billion people. According to the Food and Agricultural Organization, demand for cereals could increase by 900 million tons (FAO 2009), and the major growth in demand of food products is anticipated to be in the developing nations, i.e., nations with gross national income per year per capita of less than U.S. \$11,905 (IWAP 2015). A main question that this predicament brings is if we as a world will be able to produce that much food, or if the lack of supply will drive up the prices of food products. There are concerns regarding food production capacity in terms of land and water resources available, the rate of change with technology, and the effectiveness of technology as it relates to agriculture (FAO 2009).

A counter-argument to the need and concerns of technology for more production, is that the technology and resources already exist to feed ten billion people. The answer to the 2050 problem then is to break down various logistical and socio-economic barriers through worldwide partnership against global hunger (Wise and Sundell 2014). The underlying, agreeing fact between these two arguments, is that the world populace is growing, and something will need to change in order to fight hunger (United Nations General Assembly 2009).

Within the United States, one in seven individuals suffer with food insecurity, which is multiple occasions of disrupted eating patterns with little or no food (World Hunger Education Service 2015 ; Jensen et al. 2015). Studies have shown that access to local food as well as the ability to grow local food increases food security within communities (Lovell 2010, 2501). Access to local food through community gardens, or farmers' markets with Supplemental Nutrition Assistance Program (SNAP) and Women, Infants and Children Food Nutrition Services (WIC)

benefits have also shown to increase food security as well as the nutritional value of diets (Golden 2013)

The United States is seeing the emergence, development and growing interest in local foods¹. In 2012, nearly 8% of all farms in the United States were marketing their products directly to the consumer (DTC) or through an intermediary for human consumption (Low et al. 2015). Of these 163,675 farms, 70% utilized local farmers' markets and community supported agriculture (CSA) arrangements. The other 30% used these methods as well as selling to various distributors. From 2002 to 2007, the amount of farms participating in DTC methods grew 17%, with another 5% growth over the next five years. In 2012, the local food sales were estimated to be around \$6 billion (Low et al. 2015) which was only 0.4% of all food expenditures within the United States (ERS 2016).

In 1994, there were 1,755 farmers' markets in the U.S., and in 2009, there were 5,274, or a growth of about 200%. This extreme growth was also seen in the CSA organizations, which had only 2 in 1986, and in 2010 the total was estimated to be around 1,400 (Martinez et al. 2010). DTC outlets are a large portion of total sales for farms that earned less than \$50,000 annually. If farms were also involved in other revenue generating activities and products, such as agri-tourism, custom work, or organic production, the DTC sales are higher. Customers are willing to pay more

¹ The idea of growing and buying local, organic, fresh food products for the general consumer is not independently owned by this century. During World War 2, families planted victory gardens (The National WW2 Museum - New Orleans n.d.). These gardens produced 40% of the vegetables grown in the United States. The vegetables grown during this conflict were grown locally, purchased locally, and fed local communities. Vegetables that were not used were canned (preserved) for future use. This allowed communities to feed themselves while commercially grown food products were canned and sent overseas to feed troops.

for these products as the customers place an importance on product quality, nutritional value, the methods on how the product was raised or produced, the products environmental impact, and the desire to support local farmers (Martinez et al. 2010).

Consumer studies in the U.S. have shown that consumers are willing to pay a premium for local foods. A survey conducted by a consulting firm in November of 2012 included 1,300 U.S. individuals, evenly split between male and female, all over the age of 18, with household, income, and urban characteristics that represented the U.S. population as a whole (Rushing 2013). The responses showed that 70% of individuals in their survey would pay anywhere from 5% and higher as a premium for local food. Some customers were recorded as considering paying above a 10% premium for local food.

A vast majority of the interest in local foods within the United States taking place in Washington, Oregon, California, and the North East. Figure 1.1 shows a map of the continental United States, depicting each county and its DTC sales of local food in the year 2012. Counties are color coded by total DTC sales ranging from \$123 thousand to over \$2.5 million. This thesis focuses on a region in Washington State, consisting of the Seattle area (King county) and the surrounding counties: Lewis, Thurston, Pierce, Snohomish, Skagit, and Whatcom counties (see Figure 1.2) where the 2012 DTC sales per county ranged over \$1 million. This extended geographical area in western Washington is more commonly referred to as the I-5 corridor, as U.S. Interstate 5 runs through all of these counties. In this area, there is a documented transition that food consumers are demanding more food products to be wholesome, organic, healthy, and locally grown (Goren 2016; Goodwin 2011).

Figure 1.1 Total direct-to-consumer sales, by county, 2012

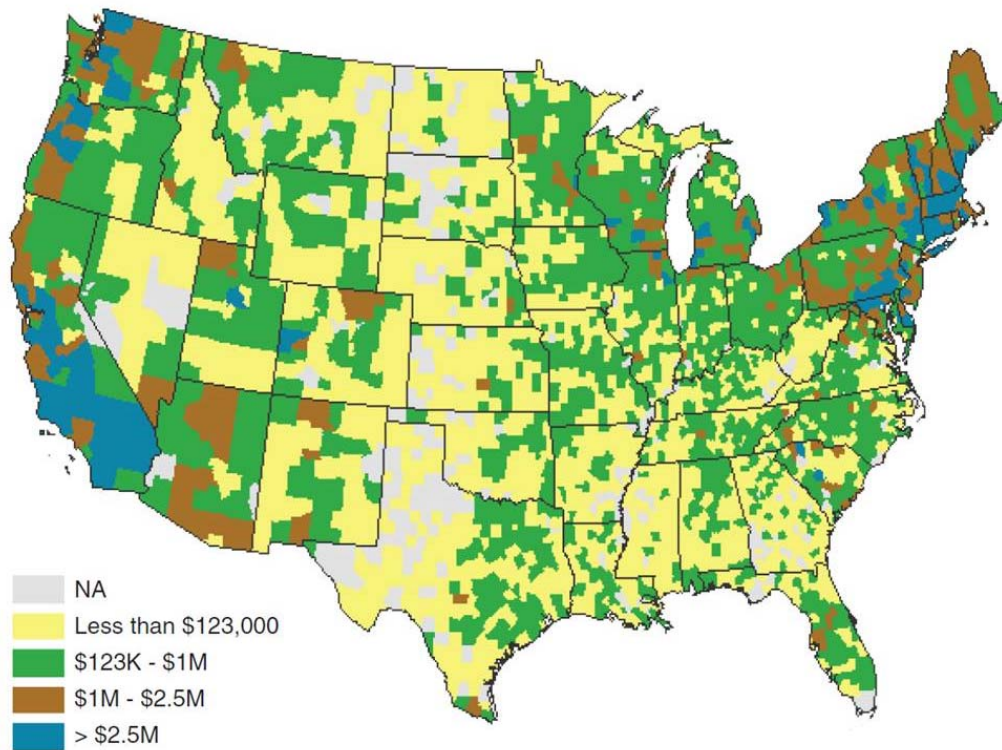
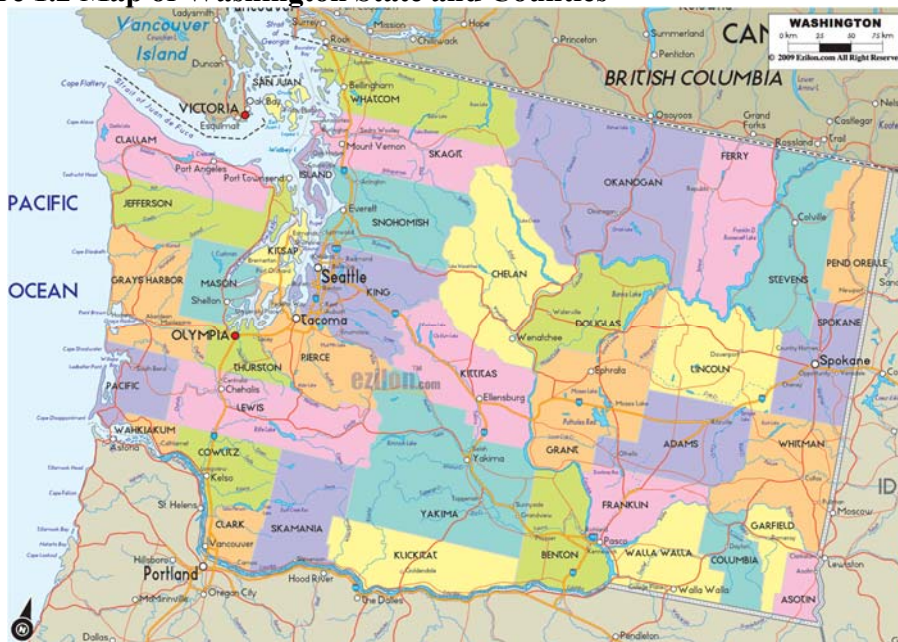


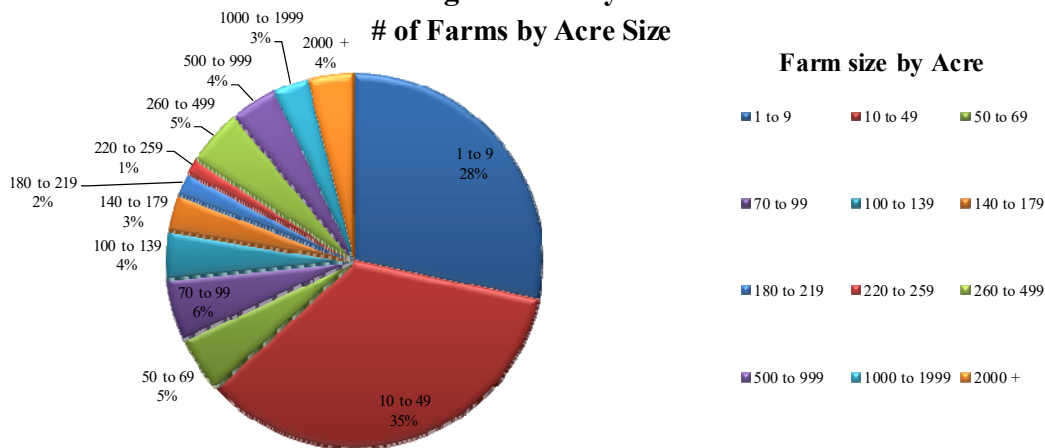
Figure 1.2 Map of Washington State and Counties



To assess the supply of local food in this area, the size and scope of the farms in Washington State are briefly reviewed. The U.S. Department of Agriculture Agricultural Census in 2012 provides information regarding farm size, average sales, average gains and losses, as well as the main focus of each farm that participated in the Census. In Washington, there are a plethora of farms in all sizes which produce a variety of products.

Nearly two-thirds of the farms (about 24,000) in Washington were less than 50 acres, 35% in the 10 to 49 acre bracket and 28% in the 1 to 9 acre bracket (see Figure 1.3). The Agricultural Census classifies farms into the following farm types: Retirement, Off-Farm Occupation, Low Sales with less than \$150 thousand in sales; Mid-Size Sales with a range of \$350 thousand to \$999 thousand; Large with sales figures of \$1 million to \$5 million; Very Large with sales \$5 million or more; and Non-Family Farms. A strong majority (78%) of the farms less than fifty acres were either classified as a retirement farm, off-farm occupation, or a low sales farm or earned less than \$25,000 a year. That same amount of farms constitutes 50% of the total farms included in the census.

Figure 1.3 Percent of Farms in Washington State by Size in Acres 2012

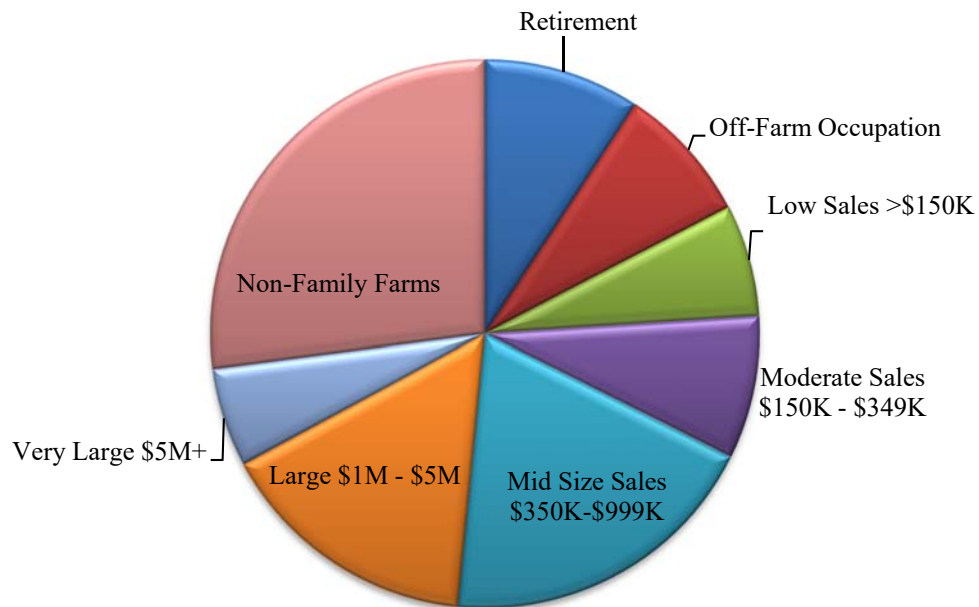


(USDA 2014)

In terms of farm acreage, two-thirds of all farmland is operated by non-family, very large sales (\$5M+ in sales per year), large (\$1M - \$4.9M in sales per year), and mid-size farms (\$350K-\$999K in sales per year) (Figure 1.4). Combining this with the financial information that on average, these larger scale farms earned 16 to 156 times more in 2012 than the smaller farms, it appears that the 80 – 20 rule applies, in that the top 20% of the producers are earning the top 80% of the income, and the bottom 80% of the producers are earning the bottom 20% of the income (see Figure 1.6). The term and data points for “average net gain” were provided in the census data table and was listed as a single figure per each farm type. No additional data or means of calculation of that figure was given.

A variety of crops and livestock are grown and produced in multiple types of farms in Washington. Figure 1.5 shows a total of farms, by type, and by category of primary function. It was constructed by analyzing and organizing the USDA census data for Washington. Interestingly, though there is a various spread of farms with differing primary functions, about a quarter of all the farms in the census listed their primary function as cattle farmers. Another 20% listed themselves as “Other Crop” farmers which the USDA classifies as “...growing crops such as tobacco, cotton, sugarcane, hay, sugar beets, peanuts, agave, herbs and spices, and hay and grass seeds, or ... growing a combination of the valid crops with no one crop or family of crops accounting for one-half of the establishment’s agricultural production value of crops for market” (USDA 2014). Some 6% within these categories classified themselves as sheep, goat and related specie and byproducts, and 4% as hog farms (see Figure 1.5 and Table 1.1).

Figure 1.4 Total Farm Size in Acres by Farm Type for Washington State - 2012



The Census data showed that there is a very diverse group of farmers in the state of Washington, both in scope of crops and or livestock produced, as well as size, ranging small backyard supplemental farms to large scale commercial operations. The point is that there is both variety and volume in the amount of farms in the area that could potentially add a contribution to the local foods movement in the region.

Figure 1.5 Primary Farm Function by Farm Type for Washington State 2012

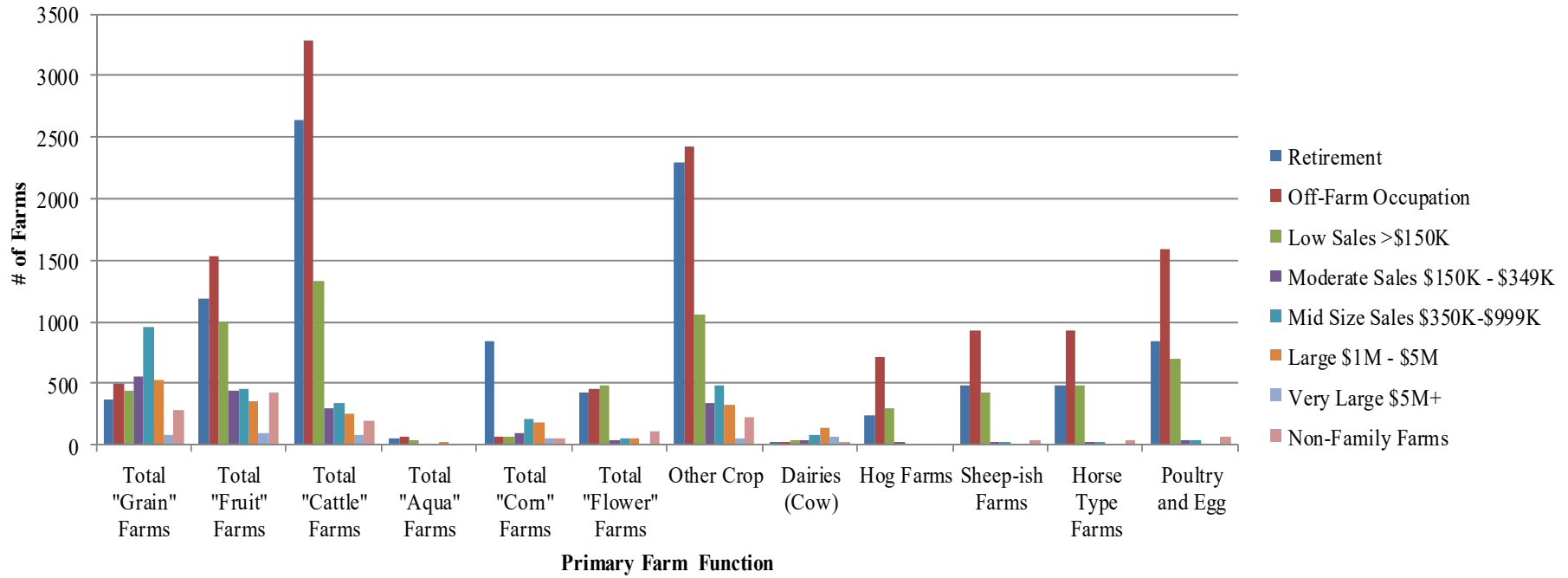
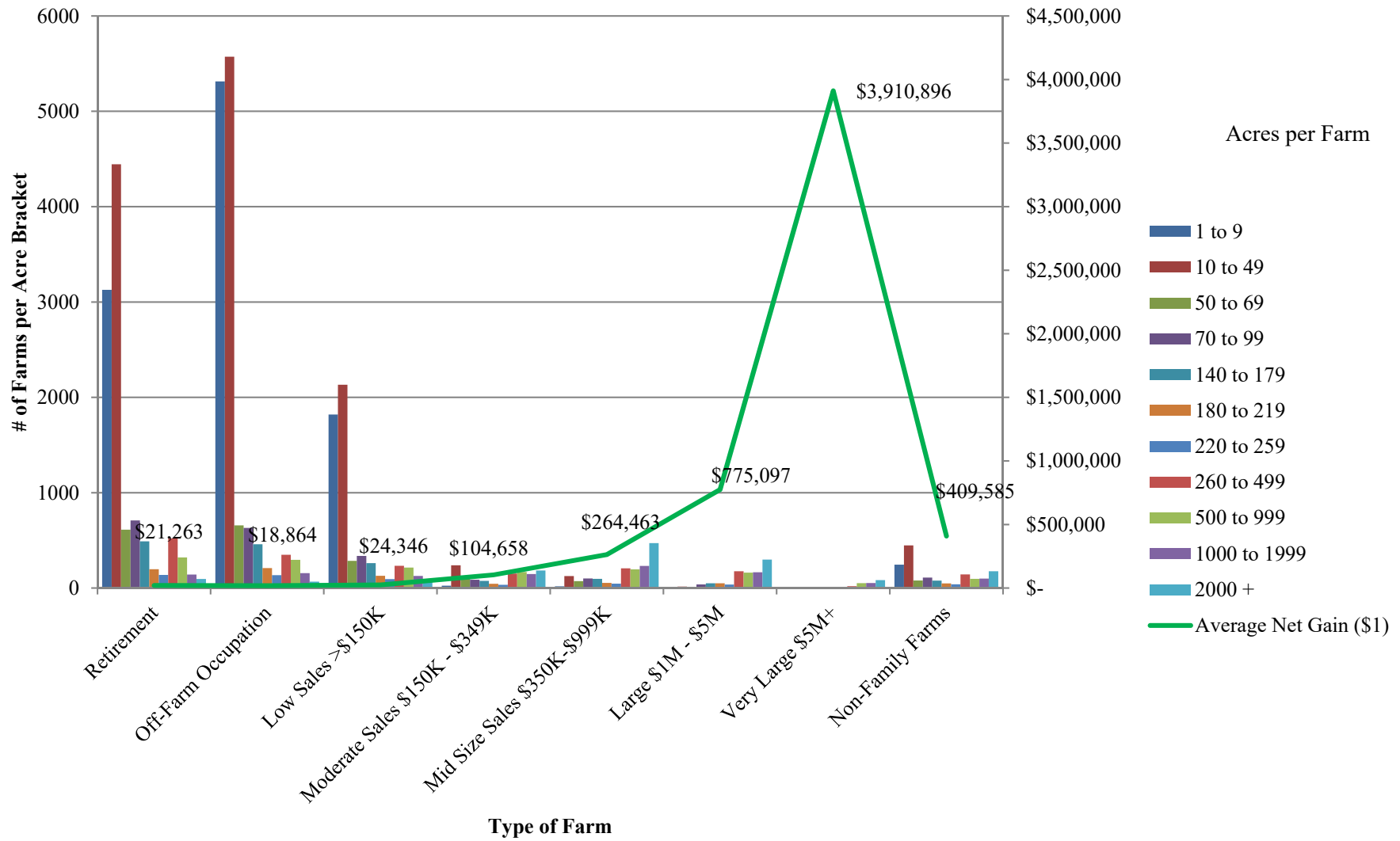


Table 1.1 Primary Farm Function by Farm Type for Washington State 2012

Farm Type	Retirement	Off-Farm Occupation	Low Sales >\$150K	Moderate Sales \$150K - \$349K	Mid Size Sales \$350K-\$999K	Large \$1M - \$5M	Very Large \$5M+	Non-Family Farms
Total "Grain" Farms	368	494	442	562	961	532	81	282
Total "Fruit" Farms	1190	1537	997	434	458	356	99	424
Total "Cattle" Farms	2637	3286	1338	294	337	255	76	197
Total "Aqua" Farms	54	60	41	12	14	24	6	0
Total "Corn" Farms	849	66	73	91	215	181	51	46
Total "Flower" Farms	432	451	485	45	52	47	13	106
Other Crop	2295	2427	1057	338	478	326	58	223
Dairies (Cow)	23	22	35	33	83	140	63	28
Hog Farms	234	719	292	22	12	5	4	15
Sheep-ish Farms	489	936	431	18	17	6	2	42
Horse Type Farms	478	923	481	27	22	12	3	42
Poultry and Egg	836	1584	701	42	31	9	9	70

(USDA 2014)

Figure 1.6 Average Net Gains by Farm Type and Size in Acres for Washington State – 2012



Given the plethora of small farms Washington, the density and amount of DTC sales for local foods in the I-5 corridor, the continued growth of farmers' markets and other local food outlets, and the need for a change in how we think about feeding a growing population, the aim of this thesis is to answer the following question. What types of business models and opportunities exist within the arena of local foods within the I-5 corridor of Washington State?

Specifically, this thesis aims to do the following:

- Understand the local food markets in the I-5 corridor of Washington state
- Identify the gaps and unmet needs in the business arena of local food
- examine and assess the strengths and weaknesses of existing and new business models in the current environment and their potential to fill the gaps and unmet needs to be identified

The remainder of the thesis will include a literature review outlining and discussing the current and recent literature regarding local food, a methods section which includes a business ideation theory as well as a methods section explaining how the meat and potatoes of the thesis was put together. The results section will include a strategic map of Local Food businesses and types in Washington, as well as a few business models that could potentially fill an unmet service gap. A simulation was run to determine the Net Present Value of each model in order to compare them one to another. At the end, the thesis will conclude with a summation of the results and how the models reflect reality. It will also suggest a potential next phase of research for personal and or entrepreneurial interest.

CHAPTER II: LITERATURE REVIEW

What is “local” food? What benefits does “local” food have on “local” communities? From the literature revolving around the first two questions, what is the role that farmers’ markets play in the local food business? In the academic exertion regarding the seemingly impossible divination of answers to the previous questions, it has yielded a fairly understandable and paradoxically most unpalatable of answers.

It depends.

This literature review will examine the various definitions of the term “local” as it relates to food, as given by different individuals and entities. How various communities define local food, and the criteria that operations and artisans need to meet in order to be defined as “local” will also be reviewed. This examination will also define “local food” as it relates to this research.

Proposed arguments and literature regarding benefits of local food will be discussed, including opposing or dissimilar viewpoints. Such topics include food security, environmental impacts, and economic and socioeconomic impacts to communities. These topics will be combined with the definition of “local” food for this study and the impacts of local food to provide a backdrop in which various business activities and opportunities surrounding local food markets will be reviewed.

The business opportunities and activities within local foods provided in the literature review have not been vetted; that is to say that things such as the cost of capital, competitors, and desired market segments have not been studied. These business ideas when combined with current literature on the local food market create a suitable framework regarding new business model ideation for the I-5 corridor of Washington.

2.1 What is “Local” Food?

As local food continues to gain popularity, multiple local and national agencies as well the general public have attempted to define what local food is. For example, Martinez et al. (2010) cite a survey conducted in King County, WA in 2005 of 54 producers of local food which found that 66% of the producers determined local food to be local only if it was produced within the county in which it was sold. In Virginia, farmers’ markets state that local food is produced in a 75 to 100 mile radius, while farmers’ markets in Dayton, Ohio expand their defining ranges to 250 miles. Larger still, in the 2008 Farm Act, local food is defined as being a food item produced and sold within a 400 mile radius from its point of origin (Martinez et al. 2010, iii, 3 , 7, 11). Conversely, another survey conducted by the Institute of Grocery Distribution conducted in 2006 found that 22% of the respondents expected local food to be produced within a 30 mile radius of where it is sold (Jones et al. 2008, 265-266).

From the same survey conducted by Institute of Grocery Distribution, the term “local food” carried with it the connotation of freshness, safety and support of the local economy, while “imported” products were more likely to carry the connotation of impure or unsafe (Jones et al. 2008, 265-266). However, if local potatoes from King County, Washington, are shipped to Ohio, at what point do they begin to carry the connotation of impure or unsafe? Jones et al. (2008; 266) point out that every location is local to someone or some community, and by purchasing “local food”, the consumer is consciously rejecting someone else’s local.

On a very small scale, a subset of “local” food is the practice of urban agriculture. Urban agriculture utilizes domestic areas in an urban or periurban environment for agricultural production which can include home consumption needs, but also expands beyond that to include educational purposes, small scale production, distribution and marketing of food products within the metropolitan areas. Roof tops, schools, backyards, greenspaces and greenbelts, and other

underutilized areas that are transformed for agricultural purposes encapsulate the idea of urban ag (Golden 2013, 3).

What then, is “local” food? How local is local and how far is not? Which one of these ideas or definitions is right? Can they all be right at the same time? The inference from the Farm Act, various surveys, and cultural activities surrounding local food gives the answer mentioned in the introduction to this section.

It depends.

The intent of this research paper is not to create a new definition, geographical boundary, or quality standard over distance traveled to determine what local food is. For the purpose of this paper, it suffices to find what definitions exist and how they relate to potential business opportunities. From the review, it appears that the term “local food” means something different to everyone. Both the broad and universally un-definitive definitions, as well as the specific criteria stated by various consumers concerning local food, show that a local food business does not necessarily need to focus on one community, region or county. A local food business should understand what the term “local food” means to its potential customer base, and then cater to that definition when possible.

2.2 What benefits does local food have on local communities?

The next question to be answered is, what benefits does local food have on local communities? The topics that seemed to reoccur in the literature in answering the question were food security, greenhouse gas emission reduction, and the socioeconomic benefits.

Food security is “the state of having reliable access to a sufficient quantity of affordable, nutritious food” (Oxford Dictionaries 2016). One idea was that the proliferation of local food would be able to increase food security, specifically, the utilization and growth of the production capacities of food sheds (geographic regions where food is produced for a populace) as well as the

relocalization of food sheds (Horst and Gaolach 2014, 405). The current idea of efficiency with food sheds was determined by a figure called the Mass Balance.

For example, Western Washington has a mass balance of 43%, which means that for every 100 tons of food consumed in the region, 43 tons were produced locally, inferring that 57 tons were imported out of the region. Another example is the San Francisco food shed, which is defined by a 150-mile radius from the city, which produces more than 20 times the amount of food consumed by the city residents, and three times more food than what is consumed in the Bay area. In other areas around the United States, there is capacity enough to feed populace within the regions from a “local perspective”. In areas where the mass balance is less than 100%, Horst and Gaolach suggest that the expansion or relocalization of food sheds, or in other words, the redefining of local for local communities to reach a proper mass balance, could be done in conjunction with a paradigm shift in economic policy and business in order to best use the production capacity already available to provide a complete mass balance for various regions (Horst and Gaolach 2014, 404).

However, food security can be seen from the perspective of the actual security of food supply. The United Kingdom, for example, when considering its food security, proposed a two prong approach. The first prong involves increasing food production of fruits and vegetables in a sustainable manner. The second prong was to continue trade relations with the E.U. block. The reason for this is that the U.K. does not intend to put all of its eggs in one basket with local food production, rather it aims to spread the risk of food security among many trade partners, including their own production capabilities. Currently, the trade block is 90% self-sufficient when it comes to agricultural food products (Kirwan and Maye 2013, 94).

Local food production can assist in food security for local areas, but when comparing the increase of local food production to the food security diversification of trade, other factors such as environmental and socioeconomic impacts also need to be considered.

One proposed benefit of local food is the reduction in overall energy needed to move, package, and process products (Lovell 2010, 150). At first glance, the idea of producing food locally, packaging, and selling locally may seem like it would be an environmental benefit. However, the combined shorter distances traveled in local markets by both producers and consumers offset the transportation efficiency of larger, mainstream methods. The studies that support this claim were conducted in the United Kingdom, but are beneficial for providing a framework of thinking regarding energy use and greenhouse gas emissions might be used within the U.S. food supply chains. It was determined that local food systems could achieve reductions when short transportation distances were done in conjunction with bulk loads, thus combining the best of both ideas (Martinez et al. 2010, 48, Footnote 28).

Extending the idea of bulk loads, motorized travel with regards to food could be reduced by up to 70% if customers participated in a food delivery system comprised of delivery vans or similar transport. With the increase of home delivery convenience, and if grocery and food delivery continues to grow, efficiencies with routes could reduce greenhouse gas emissions in this segment from 17% to 87% (Coley et al. 2008, 152). Coley et al. (p. 154) also found that if a customer drives more than 4.5 miles in a round trip to purchase organic products, then that customer's greenhouse gas emissions could be greater than the main stream system of cold storage, packaging, and shipping.

Does local food then leave a positive impact the environment in terms of greenhouse gas emissions? It depends on the definition and implementation of local food system. Some grocers,

such as Fred Meyer, purchase local produce from within the state or neighboring states and ship them throughout their grocery stores for purchase, which as defined by the literature, does take part in reducing the carbon foot print and can be defined as local food per the 2008 Farm Act. If farmers' markets are located in such a way that the customers do not need to travel more than 4.5 miles, then those systems will also play a part in the reduction of greenhouse gas emissions.

There are various socioeconomic benefits attributed to local food as well. Farmers' markets, for example, the embodiment of local food, have been shown to be an economic boom to their communities. In Iowa, each \$1 spent as a farmers' market was shown to generate \$0.58 in indirect and induced sales in the community that the farmers' market took place (Martinez et al. 2010, 45).

As well as this economic benefit, there are also various socioeconomic benefits in regards to access to local foods. Such benefits included access to nutritious food, reduced obesity, and reduced diabetes. In extreme circumstances, when local food systems are implemented, utilization of resources once not considered or overlooked, such as backyards and urban greenspaces, are transformed into gardens and community agricultural plans (Lovell 2010, 2502,2504). Urban agriculture has even shown ecological benefits such as reduced soil erosion and urban dust reduction (Hampwaye 2013, R7).

Community gardens could offer multiple impacts on their communities. Aside from beautifying unused arable space, they have been shown to create local pride and community attachment to these gardens. Additionally, these areas were less likely to have crimes or be vandalized. These safer areas promoted trust among residence, which led to social interaction and eventual friendships. The utilized urban gardens also led to an increased intake of fruits and vegetables. From a community standpoint, community gardens that were established in or near

residential areas raised value of the nearby homes by as much as 9.4% within five years (Golden 2013, 8-14).

These benefits regarding local farming and urban agriculture from an environmental and socioeconomic perspective provide a broad canvas for the setting in which current businesses and entrepreneurs operate or desire to operate. At the heart of local food, however, is the consumer, and their motivations and desires drive the market segment. Whether the consumer purchases local food to support the local economy or to protect the environment, or they believe that local food is more nutritious, entrepreneurs should cater to or create businesses that feed that inward desire.

2.3 Business environment surrounding farmers' markets

Farmers' markets play a much larger role than just allowing local vendors, artisans, and producers to sell their goods to communities on a Saturday morning. Farmers' markets can be used not only as an accessible storefront, but also as an incubator for businesses, both new and well established. For example, a well-established, local sauce and marinade company may be considering a few new flavors to add to their menu. Instead of taking a relatively large risk and mass production, and then selling to see if the market agrees with the new products, this local company could set up a booth at the local farmers' market, and sell their new products to see if it takes. Besides the ability to test new products, farmers' markets also allow for an informal opportunity for small businesses involved with local food to network, collaborate, share ideas, innovate, and improve their skills in business or marketing (Cameron 2007, 370).

The farmer market has also shown to be a low risk environment where the producer or entrepreneur can visit directly with a customer and, if they play their cards right, understand exactly what that customer is looking for in a product and how it is packaged, and receive feedback on the business' current product offering. This direct, low cost and low risk environment can be a

spring board to help local food businesses start off with the right products, the right customer focus, and the right marketing pitch (Cameron 2007, 372).

In New Zealand, a few local food businesses utilized the incubation of farmers' markets to grow their companies to a point where they did not need to rely on the farmers' market for income, and eventually left the market to pursue larger, more profitable customers. Other business owners used the farmers' market as a primary source of income, because the financial cost and the operational capability of scaling up their company were too expensive. This was primarily the case with commodity-type goods such as generic vegetables or eggs. The benefits of business incubation from the farmers' market were seen in companies that sold value-added products (Cameron 2007, 372, 375).

This benefit, for those vendors who make the most out of farmers' markets, is something to consider when creating a business model surrounding local foods. The benefits of community interaction, the business learning, the advice and feedback for product revision and honing, that all come from the incubation within the farmers' markets are invaluable to business owners. Who needs consultants, when you have low risk, low cost, market interaction and feedback? More importantly, local food businesses should think about these benefits and determine if and how those same characteristics can be implemented into current practices.

2.4 Conclusion

Local food is different to everyone, and the environmental and social benefits can be debated. Whether the benefits of local food are real or perceived, beyond the ambiguous definitions of "it depends" for those two topics, there is still a fundamental principle that cannot be ignored. There are customers who are interested in local food. How local food businesses interact and earn money from those customers depends on the firm's capability to understand what "local" means to each of its potential customers.

In the next section, a theory on business ideation will be discussed and expanded upon as it relates to this thesis. The benefits from a tiered service, product, and customer segment will also be reviewed. A compilation on how data was compiled regarding current local food businesses that operate in the I-5 corridor of Washington will be explained. The potential customer segment in the area will also be reviewed.

CHAPTER III: THEORY AND METHODS

The theory for this paper is defined in two parts: entrepreneurial idea generation and business model ideation. The first part of this section discusses what entrepreneurial idea generation is and defines it as both a point on a 2x2 matrix as well as a process flowing through that matrix. The second part, business model ideation, reviews various levels of vertical coordination as it relates to business models and capabilities. It also reviews an article that covers the core concepts and principles for a local food logistics company in Finland, specifically the purpose of tiered services and understanding core competencies. Lastly, it explains how the financial estimates of costs and revenue were gathered and created.

3.1 Inception, Research, Refinement, and Discovery

The inspiration for this paper came from a case study on the wine industry and the various disruptions that have occurred in that industry over the last decade. During a class discussion, a comment was made about backyard wineries in Washington and their involvement with local tourism. The idea presented itself in the following series of questions. What if instead of backyard wine, people did backyard gardens and bought, sold, and traded food on a social media site? What impacts would that have on solving hunger in the United States? This thesis has evolved dramatically since that point. The focus has shifted to current trends and practices with local food and what opportunities exist within those trends and practices. Inception, research, refinement, and discovery summarize the encompassing theory for this thesis.

Patrick J. Murphy better explains a portion of the process in his article “A 2x2 Conceptual Foundation for Entrepreneurial Discovery Theory”. He states that idea discovery is not so much on a one dimensional continuum ranging between a “Deliberate Search” (hard work) for an entrepreneurial discovery and a “Serendipitous Discovery” (luck), but rather a 2x2 matrix (Murphy 2011, pages 365 –367).

In this matrix, the X axis is the amount of serendipity involved in the discovery, ranging from low to high. The Y axis is the amount of deliberation required to find the idea. The upper-right hand quadrant is quadrant 1 (Eureka), upper left is quadrant 2 (Deliberate Search), lower right is quadrant 3 (Serendipitous Discovery) and lower left is quadrant 4 (Legacy) (Murphy 2011, 367).

The Eureka quadrant, as Murphy states "...can "break the mold" of what is familiar, even to the extent that they are astounding to the entrepreneurs who discovered them through their own effort" (Murphy 2011, 367). The Deliberate Search quadrant is best understood as situations where luck, or serendipity, has minimal impact. Multiple opportunities and ideas are considered, researched, vetted, and analyzed simultaneously, because to "rely on luck or chance" is not financially feasible (Murphy 2011, 368).

The Legacy quadrant can be understood as a second generation entrepreneur, one where either a family member is taking over the firm, or the firm is purchased by another entrepreneur to own, run, and manage. Essentially, the idea of the firm is not owned by the new entrepreneur of the firm. In this instance, the work to create the idea, and the luck of the generation of the idea are almost negligible (Murphy 2011, 368).

The Serendipitous Discover Quadrant explains those entrepreneurs who have the mental acuity and knowledge to manage and take advantage of the opportunity at hand. This can also extend to other opportunities related to discoveries in the other quadrants that were not taken fully advantage of. Some might call this luck. It could also be said that these individuals were in the right place, at the right time, with the right knowledge, seeing the right opportunity (Murphy 2011, 369).

To expand on this theory of Entrepreneurial Discover with a 2x2 matrix, one could add that the discovery of an idea is not a static point in a given quadrant, but that it is evolutionary in nature.

This thesis' theme began as an online market place to promote small micro farming and local agriculture within communities. It addressed superficially that in order to feed a growing populace, proper use of current land assets was needed. After some thought, the next mental hypothesis was that there was no better way to maximize land utility for food production than through micro farming and hobby farming, and then creating an outlet where these small producers could market their products to their local populace. At various points of this research were discussed and vetted, it was discovered that proper due-diligence was needed to see if the initial idea was the right one to pursue.

To summarize, in conjunction with Murphy's theory of entrepreneurial discovery, this process started at a point of Serendipitous Discovery, transitioned to a Deliberate Search with the aid of a major professor, and at the end, the hope is to be at a point of Eureka. The discovery of the idea is not just a point in time, but a time line filled with development and refinement of the initial idea, transitioning from serendipity, to eureka through due diligence.

Once the entrepreneurial idea is discovered, or a set of entrepreneurial ideas generated, the next step would be to construct models on how the businesses would function with their customers, internally and externally.

3.2 Benefits of a Tiered Service Offerings

Dollar Shave Club, drive through car washes, Costco membership fees, just to name a few, all have a similar perspective when it comes to how they market their products. Each has a tiered service offering! Each starts at a basic membership or service fee and escalates from that price point while also offering additional services or benefits. Why is this a successful model when it comes to pricing and marketing? And how could expansion of this model to tiered customer management help a firm?

Continuing with the Dollar Shave Club example, part of the success could be seen in that a consumer may have difficulty converting per-item price to per-use price. Specifically, though the blades sold by Gillette are more expensive, and they may have a higher per unit cost, the durability and longevity is greater than the blades sold by Dollar Shave Club. The consumer thinks that they are getting a better deal with a \$3 monthly subscription (includes shipping), but may end up spending more (Chernev 2012). One fault of this example is that the customer has a single option per transaction per tier. In other words, it does not make sense to purchase from two different tiers at the same time. A single individual, for their own use, would not purchase both the basic package from Dollar Shave Club (the humble twin) and the premium package (the Executive). Tiered pricing is not limited to this type of purchasing behavior or subscription models.

Tiered pricing also has a part in consumer goods, ranging from cars to grocery items. Romaniuk and Dawes, in an article titled “Loyalty to price tiers in purchases of bottled wine”, looked at price tier loyalty and wine and how customers would buy two or more of a type of good within different tiers. As an example, to introduce their study, they briefly discussed shoes. An individual may purchase a set of tennis shoes, or casual shoes for everyday where, and another set of high end shoes for special occasions (Romaniuk and Dawes 2005, 58). As the study relates to wine, Romaniuk and Dawes found that individuals did not purchase from a single price tier, but from multiple tiers. In their study, they found that if someone purchased a bottle of wine in the \$15 to \$19.99 price range, there was a 1 in 5 chance that they would also purchase from other tiers, excluding adjacent tiers (Romaniuk and Dawes 2005, 63).

Having a tiered product selection, rather than a subscription base model has the advantage of multiple product sales at varying price points. Another notion of tiered pricing comes from the other direction in marketing. Instead of placing products or subscriptions into differing tiers, a firm can

place their customers into separate tiers based on past purchasing behavior. Once a customer base is tiered, additional services and products can be generated to capitalize on purchasing behavior and ensure customer loyalty.

An example of this was BJ Wholesale (as a customer) and a networking and IT vendor. The vendor offered to integrate all of BJ Wholesale's data processing into a central location near the vendors' corporate location. Through some additional sales growth and additional services provided to the customer, they went from a lead to a top tier customer. On Memorial day in 2006, there was a "widespread system failure" that was in no part the fault of the IT vendor. The vendor was able to solve the problem in less than an hour, the effort in which further solidified the customer loyalty of BJ Wholesale (Pitta et al. 2006, 428). Had the vendor not pursued BJ Wholesale, and attempted to move them up the customer tiers, the system failure would have taken BJ Wholesale much longer to solve. The loyalty and concurrent preferential treatment was mutually beneficial.

Tiered subscription services, product selections, and customers are all superior marketing decisions when compared to base, standard product pricing and customer management. Tiering customers and products also allows for a customer to determine how much money they want to spend, rather than limiting the customer to one product purchase decision. How do these these principles of tiering products and customers relate to local food enterprises?

In an article by Martikainen, Niemi, and Pekkanen, titled "Developing a service offering for a logistical provider – Case of local food supply chain", the authors looked specifically at developing a logistical service provider or an integrated supply chain business for a local foods system with tiered service offerings. The authors also showed how a such a company could be structured, both operationally and strategically with the following process.

The first step was to put together a “business canvas” (Martikainen et al. 2013, 319). This canvas provides a high level overview of the market showing who the major players are, their service offerings, and the pertinent characteristics about their various transactions. From the business canvas, market segments that are not being serviced, or services in general that are not being provided became visible. Having identified the target area within local foods, the next step was to construct a product and or service offering.

This is where the tiered service offering development comes in. The service/product offering can be developed in three steps. First is the development of the concept. At the core of the new business, there is a set of services that earn the income. These services are the foundational product or service that the rest of the enterprise is built on. For the second step, developing the service package, Martikainen et al. (2013) states that “it is necessary to distinguish between three groups of services” (page 320). The three types of services in the business model discussed in the article are Core, Facilitating, and Supporting services.

Those three services are also tiered, with Core Services being at the bottom, Facilitating at the middle, and Supporting services at the top. Core Services are those that service the most important and immediate needs of the customer. Facilitating Services are the services needed to increase “usability and usefulness of the core services provided”. Lastly, Supporting services are, when subscribed to by the customer, are what keep the customer coming back to you. It is what separates you from the competition and makes you more favorable than the competition.

In the article by Martikainen et al., a local food logistics company is theorized. There are three core services: distribution and transportation, intermediate inventory and warehousing, and access to a processing terminal where products can be packaged. The next tier, or the Facilitating Service, is Payment Transfers and Invoicing, where the business would handle invoicing and

receiving of payments for their customer base. The top tier, or the Supporting Service tier, works on marketing their customers' products and the procurement of local products as needed. It is at this top tier, where the value to the customer needs to be explicitly evident, both financially and operationally. The reason being that the higher a customer rises in the tiers, the more of the business' integrity is at stake. If a firm cannot deliver exactly to a customer's liking within the parameters of the given tier, the customer may withdraw from offered services all together.

To assist with ensuring customer satisfaction and the firm's profitability, the service packages/offerings needed to fit three criteria: 1. the service offering needed to be lucrative for the customers 2. applicable for the target customer (in the case of the study, this meant a small business or an entrepreneur) and 3. other services other than the core of what the business does needed to be outsourced (Martikainen et al. 2013, 322). In other words, keep it focused and keep it simple.

The question of whether or not the business model that Martikainen et. al created would be profitable or not was not answered as "The elements of profitability lie in the utilization of the excess (return) capacity of the logistics operators. On the other hand, this limits the flexibility to meet the exact customer needs" (Martikainen et al. 2013, 323).

Understanding tiered business offerings as well as the three types of service set a mental framework for construction of business ideas within local foods. The next portion of theory to collect was based on the various levels vertical coordination a firm can obtain, and how each level or system impacts the operation of the firm.

3.3 To Integrate, or not to Integrate? That is the Question

In an article titled, "Strategic choice along the vertical coordination continuum" by Peterson and Wysocki, the authors look at strategic options for vertical coordination as a two dimensional continuum with the following segments: spot/cash market, contracts, relation-based alliance, equity-based alliance, and vertical integration (Peterson et al. 2001, 151). The

characteristics of each strategic option in that spectrum start with being very self-serving “Invisible Hand” and migrate to a mutual interest or “Managed Coordination”. The “Invisible Hand” was defined as being focused only on the firm’s interest, working on short term relationships, acting very opportunistically, closed lipped about practices and procedures, while at the same time, being extremely flexible with market transitions and independent in terms of a firm’s ability to choose a strategic direction. Vertical integration, or “Managed” Coordination as the authors put it, requires mutual interest, focusing on a long-term relationship, sharing benefits of a partnership (including information), stability and consistency within a market segment and interdependence with decision making (Peterson et al. 2001, 152). As one looks through the spectrum of options for vertical coordination, the characteristics change from the characteristics of the Invisible Hand to more of a Managed Coordination or relationship.

Dependent on the goals of the firm, each level of vertical coordination provides certain benefits and consequences in regards to the transactional relationship of the firm and its suppliers. Take for example, a food manufacturing company and its maintenance inventory program.

Using the most base level of coordination, the Spot and Cash Market, the buyers could purchase commodity type goods such as motors, bearings and hand tools. The only management “costs” incurred in such a transaction are the decision to purchase the products or not. However, the firm cannot dictate to its supplier, in this type of vertical coordination, the type of motor or hammer wanted. A standard five-horse power vertical pump motor is all that is offered (Peterson et al. 2001, 152).

The next tier of vertical coordination, Specification Contracting, allows for the firm to purchase products that fit a specific purpose and specification (a stainless steel motor what is wash down resistant for example). The products purchased better fit the needs of the firm, however,

there are higher management costs associated with Specification Contracting, but those costs can be mitigated through orchestrated Requests for Proposals (RFP's). The RFP process allows for multiple suppliers to bid on a specification, negotiate with multiple suppliers, and result in an overall costs saving on a category or product specification that pays for the management costs plus delivering savings to the firm. If either party (the supplier or the firm) fails to meet the contract in terms of payment, or product specification, immediate remediation, and in extreme cases, litigation might be needed (Peterson et al. 2001, 153).

Relationship-Based Alliances, following the trend, increase in management costs, and are harder to remove from compared to contracts and spot market purchases. In the example of the maintenance inventory purchasing, an example of this might be a supply partner who is currently selling half, or more, of the firms current related purchases. The supplier would be involved in the day to day operations of the firm, assisting with improvements in products or processes. The supplier might also be involved with purchasing, sourcing and managing inventory. These extra services and cost savings could be exceptional and extremely mutually beneficial. However, the higher management costs, from the firms perspective, come from managing the supplier to ensure honest work. To quote a metaphor, in this instance, the fox is watching the hen house. In other words, there are circumstances that unfortunately arise where the integrity of the relationship (or lack thereof) is not enough to prevent opportunistic behavior. From personal experience, there has been instances of a relationship similar to this one, where the supplier would reach out to their suppliers that the firm was purchasing from, asking them to raise prices 20% for the firm due to "material price increases and demand". The supplier would then source from the other supplier, pay a 10% price premium, instead of the 20%, call it a cost savings and pass the bill to the firm. The supplier was caught "cheating", the agreement was terminated, and it took all of a year before

the situation could be resolved. The next supplier that came in to fill the gap also started down this same path. For any firm, a varying, specific set of management skills is needed to operate in any one of these tiers (Peterson et al. 2001, 153).

An Equity Based Alliance can be beneficial for two firms, as there is the sharing of complementary strengths, while still maintaining separate business entities. The reward of such ventures are shared, as well as the risk. Management costs are higher still and is extremely difficult to walk away from such an endeavor. Such entities could include structures such as a Co-Op or a joint venture. The combined skill sets and resources could lead to better efficiencies, increased sales, or gains from economies of scale and scope. Another weakness with this model is that if there could be compounded weaknesses from a combined effort of the two firms. That is to say, if there is synergy in an equity based alliance, there is also a risk for discord. For example, the discord might ensue from perceived unequal benefits after the negotiation or costs and property rights (Peterson et al. 2001, 155).

The last model is Vertical Integration. A strong benefit of being vertically integrated with a supplier or buyer is the ability to tailor product specifications to end customer needs or services. Management decisions are controlled at a central portion, and the firm receives all of the reward from the operation (savings and revenue). In conjunction with these benefits, this model has the highest management costs as well as the largest amount of financial and operational risks. Vertical integration also exposes the entire supply chain of activity within that business to other processes within that chain. (Peterson et al. 2001, 155).

With these business models explained, the authors pose five questions to determine where a particular firm should locate itself on the continuum of the various vertical transactions. The authors also make a point that one could make this type of decision for each type of forward and

backward vertical exchange relationship that takes place when doing business (Peterson et al. 2001, 152).

The first question is to ask if the current coordination too costly for the firm? A second question is also asked, and that is to consider if an alternate strategy could reduce the cost of the coordination. The authors state “The match is judged better or worse under the logical principle that the more costly the errors, the more intense the control needed and conversely the less costly the errors, the less intense the control.” A third question is whether or not the strategy is if it is programmable? Meaning, can the strategic process be replicated easily, correctly and is it workable?

The fourth question is “Can it be implemented?” The authors list out four conditions or questions to determine if a strategy can be implemented.

1. Capital Availability
2. Compatible Partnerships – are there suppliers / partnerships / relationships in place that can help meet the needs of the desired strategy?
3. Control Competence (management competence) – does the decision maker have the skill set to manage the strategy based on the amount of control is required. For example, ordering from a spot/cash market requires a very different skill set than working with a supply partner towards a common set of goals.
4. Institutional Acceptability: Is the strategy legal, and does it fit within the norm of economic behaviors of society, industry and culture?

The fifth question to ask is if the risk and return acceptable (Peterson et al. 2001, 159)? From an entrepreneurial perspective, these questions may not completely relate to the formation of a

business model, but there are valid points that need to be considered, or at least thought of in the background during the process.

Other points in the article discuss the different characteristics of business models ranging on the spectrum. Starting with a spot market purchasing and selling model, to contractual relationships, to relationship-based alliance, to a cooperative, and ending with a total vertically integrated system. The article also explains the different internal governing mechanisms and control before and after the transactions take place (Martikainen et al. 2013, 152-156).

Using this thought process as another building block for the theory of this paper assists in determining multiple avenues to fill a service gap in the market effectively. Finding the service gaps in the market segment was the first step in the methods of this thesis.

3.4 Methods

3.4.1 Understanding the Suppliers of Local Foods

Part of the due diligence to find potential service gaps included creating a strategic map, also known as a business canvas as explained by Martikainen et al. (2013). It started with identifying various firms in the area involved with local agriculture and food and learning from company websites to find in general how each firm operated. Initially, the strategic map was a word document, listing out the types of products sold, how logistics was handled, and the types of subscriptions (if any) that were offered by the firm. The strategic map was a fluid document with no set list of criteria to fill or find, but rather approaching the strategic map with an open mind.

The categories found to this point were: region served, annual seller membership fees, annual buyer membership fees, provision of in-house logistics and warehousing services, intermediary distributor, third party logistics provisions, involvement with CSA programs (Community Supported Agriculture), logistics of CSA products, the type of customer base (whether it was institutional, direct to a consumer, or both), types of products sold (raw foods,

processed foods, non-edible products sold), if the firm is a producer of the products sold, and if the company was a listing service for producers and artisans.

Next, the map was consolidated into various types of food companies: farms, food hubs, grocery co-ops, and listing services. Each portion of the map was color coded Red, Yellow, or Green. Red indicates that all of the businesses in that type of business model do not operate within the specified strategic category. Yellow indicates that some of the businesses within that business model operate within the specified category, and green indicates that all the businesses within that business model operate within that specific category.

To clarify, in this map, a category is a strategic characteristic about the business. A business type is the general function and purpose of the business: farms, food hubs, grocery co-ops, and listing services.

3.4.2 Understanding Potential Buyers and Market of Local Foods

The methods involved searching for secondary data sets and organizing them into useful information. Such was the case regarding the populace to which local food systems serve in the I-5 corridor of Washington. Data on total population, median income, and average percentage spent on groceries, and average size of household per county were easily accessible.

First, the total population of Washington State by county was organized using a table from the US Census in 2010 (Pitts 2010). Then, the 2012 median income per county was added next to it. The next step was to find the average count of individuals per household by selected counties and add that to the table as well. The estimated grocery budget was calculated by taking 5.6% multiplied by the median income by county (Bureau of Business & Economics Research 2013 ; Morrison 201) multiplied by the average amount individuals per household by county divided by the average individuals per county (United States Census Bureau 2016). This calculated figure is

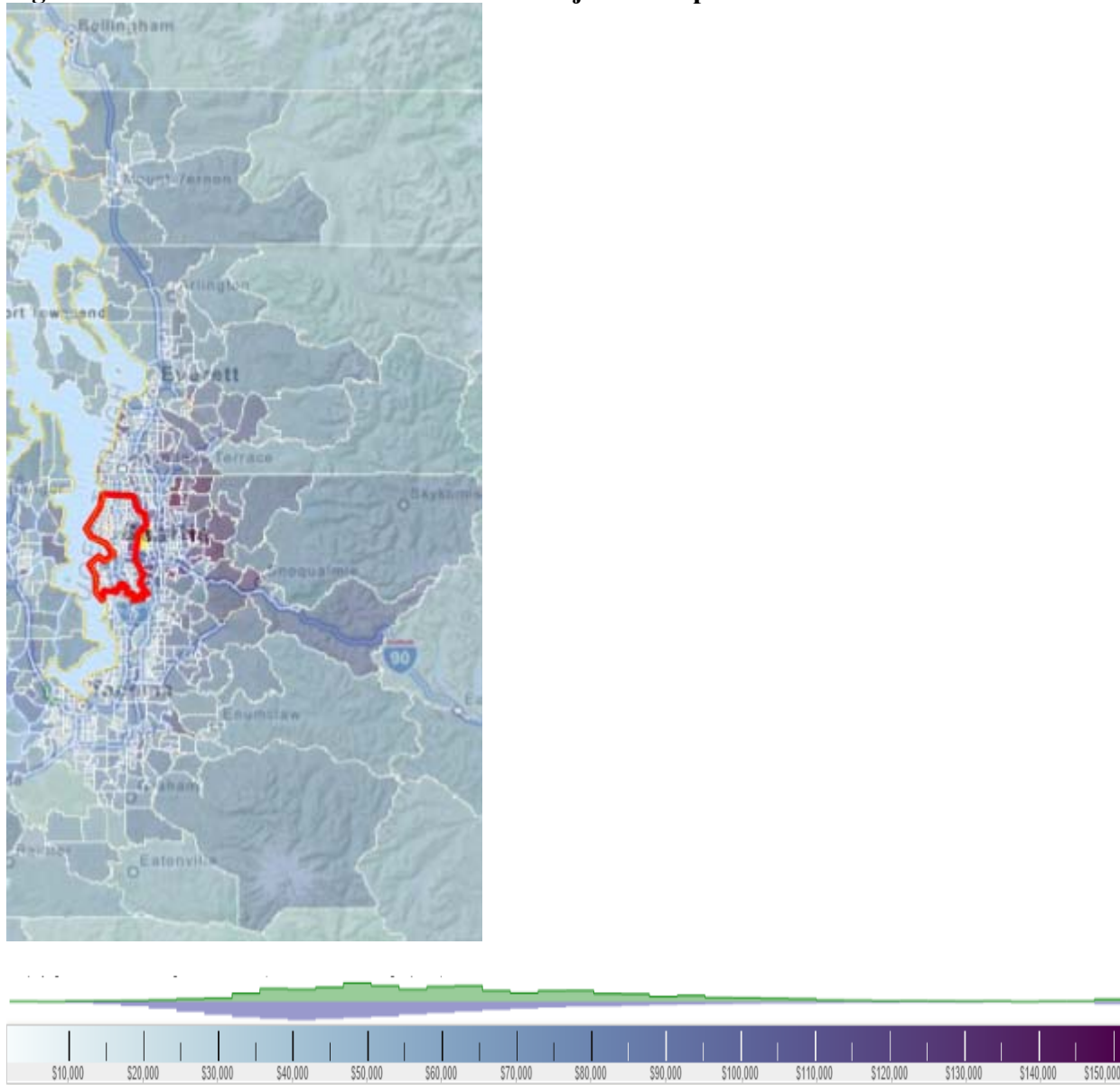
the Estimated Grocery Spend per County. That dollar figure was then multiplied by 0.4% (ERS 2016; see page 2).

The end result is a ballpark estimation of the local food budget per each county. This calculation was compared to the 2012 Median Household income by county for Washington State (WA Office of Financial Mgt 2015), as well as an interactive map (see figure 3.1) that shows median income by city and region for Washington, specifically, the I-5 corridor (City-Data.com 2016) . What the interactive chart shows, is that more regions in King County have larger median incomes than anywhere else in the state. The method produced the following table.

Table 3.1 Estimated Local Grocery Spend for Selected Counties 2012

County name	Total Population	2012 Median Income	Grocery %	Average Individuals Per Household	Estimated Grocery Spend per County	Estimated Local Food Spend (x 0.4%)
Island	78,506	\$55,090.68	5.6%	2.35	\$103,062,612.21	\$412,250.45
King	1,931,249	\$68,313	5.6%	2.44	\$3,027,878,811	\$12,111,515
Skagit	116,901	\$56,443	5.6%	2.57	\$143,774,511	\$575,098
Snohomish	713,335	\$64,033	5.6%	2.67	\$958,023,376	\$3,832,094
Totals	2,839,991				\$4,232,739,309	\$16,930,957

Figure 3.1 Median Income Color Chart for Major Metropolitan Area of I-5 Corridor 2013



3.4.3 Business Model Costs and Revenue Generation

The last step was to ideate different models that would fill the service gap(s) identified in the strategic map. Using concepts from the literature review, such as vertical coordination and tiered service offerings, models with various levels of services provided to the consumer were defined. General concepts of operation were also explained, as well as their potential advantages and disadvantages. As each business model idea was generated, evidence-based estimates were

sought for startup and monthly operating costs. Estimates were compiled into an Excel model to determine what monthly revenues would be needed in order to pay back a business loan to cover startup capital at rate of 7.75% in three year's time (36 months or periods).

Though each business model and attributed revenue streams are inherently different from one another, the same template was used to calculate needed revenues. The amount of the business loan was equal to the total startup costs in each model. The loan payment was calculated by combining the Principle Payment and the Interest Payment functions in Excel:

PPMT = (Business Loan Rate / 12 , Payment Period, Total Payment Periods, Total Value of Loan)

IPMT = (Business Loan Rate / 12 , Payment Period, Total Payment Periods, Total Value of Loan)

The figures were then placed into a table of 72 periods. The table included the following from left to right: Period, Monthly Sales, Monthly Costs, Sales minus Costs, Loan Payment, Principle Payment, Interest Payment, Additional Principle (\$0), Remaining Principle, Cash After Payments.

The initial monthly sales at Period 1 was calculated using Excel's Solver function. Solver was set to calculate what the monthly sales in Period 1 needed to be in order to have \$0.00 in the Cash After Payments in Period 1. Then, assuming a 5% annual growth rate, with associated variable costs per each model increasing accordingly, the table was filled with the calculations for 72 periods (or 6 years).

Table 3.2 Business Model Revenue and Loan Payment Table

Period	Monthly Sales	Monthly Costs	Sales - Costs	Loan Payment	Principle Payment	Interest Payment	Additional Principle	Remaining Principle	Cash After Payments
0									
1									
2									
3									
4									
5									
6									
7									
8									

The net present value was then calculated using the NPV equation in Excel with an estimated annual growth rate of 5% (divided by 12 months) taking into consideration the rate of inflation of 1% (US Inflation Calculator 2016). Usually, with a NPV equation, you include the cash investment at period 0. Since these models are attributing for that initial investment at time 0 by way of loan repayments, the initial investments were not included. Instead, the NPV was based on the values in the Cash After Payments column.

$$NPV = (5\% / 12 , \text{Cash After Payments from Period 1 through 72})$$

With the NPV equations, as the interest rate increase, the calculated NPV also increases. When building the models, the rate of 5% seemed to paint a reasonable picture and did not overstate the value of the businesses. The time frame of six years (72 periods) was also selected, as that would allow for the business to be established and it would also paint a representative picture of potential over time. The values that were in the Cash After Payments column were not carried over into the next period. The reason being that additional costs and expenses, such as owner withdrawals, additional payroll, taxes and so forth, which are needed for a formal business plan, were not placed into the current model that focuses on feasibility.

Given these conditions, the net present value was calculated under three conditions: the lowest feasible case, the most likely case, and a best case scenarios. The first year revenues of each

of those business models in each of those cases was then compared to the 2012 estimated market value for the target area to determine what the estimated market share could be.

3.5 Summary of Theory and Methods

With the methods of searching, gathering and compiling data regarding potential customers of the local foods system into data tables, graphs, charts and figures, two main results were sought: what various business models are doing within the local foods market, and what is not being done. Combining that with an overview of the market growth of the local foods market in the area, the financial stability of the nearby metropolitan area, and the possibility of continued growth within local food markets, serve as a framework to review potential business opportunities for further review of various business opportunities.

The next step is to understanding the potential customers, either as producers, or as consumers, and their preferences with regards to local food. That process is critical to finding one or multiple “Eureka” business models.

CHAPTER IV: FINDINGS

This chapter is broken up into three sections. The first section will cover the competitive map, and in some detail, the operational characteristics of the business models involved with local foods in the area. A condensed version of the map will also be shown, comparing the different types of business models as a whole while maintaining the categories of the original map. A conclusion will be shown as to what service gaps exist within local foods in the area, as well as potentially unlisted segments that the service gaps point to. The second portion will briefly review potential customers in the target counties, their income, population, and the concentration of wealth by county and region. The last section will discuss potential business models that will fill the service gaps, attempting to create new and uncontested market space within local foods, and the advantages and disadvantages of each business model. An analysis will also be given comparing the expected financial performance of each model.

4.1 Competitive Map

The map consists of seventeen companies that participated in local foods in the area as of 2015. Eleven of those companies are local farms, two are food hubs, four are listing services, one is a local meal delivery company, and the last is a local foods grocer.

The local farms varied in their product offering, including poultry, beef and pork production, poultry farms, organic products, and processed goods such as cheeses, jams and jellies. The farms included in this competitive map all sold directly to the general public, either through a pick-and-pay system, or with orders and pickups. Some of the farms participated in a CSA program where the farm sells a “share” to a consumer for a specified time period and sends the purchaser a set quantity of produce grown on the farm. With the CSA’s in the area researched, the buyer does not have a choice as to what is included in the CSA or in what amounts. That is to say, the farm advertises what is to be included in the CSA share, but during the season of that CSA

share, the specific product selection is variable. These CSA produce are not delivered directly to the customers, but are either sent to a drop off location where multiple customers pick up their share, or are to be picked up directly at the farm. Some of these farms also supplement their sales by selling non-edible goods, such as cooking utensils, books, and clothing items related to their farm (i.e. socks made from their alpaca farm).

The food hub businesses in the area of focus in Washington state purchase local food products from large scale farms and sell to large, institutional or commercial customers such as universities and restaurants. Of the two that operate in the area, both do so in very different ways. Food-Hub Inc. operates in Washington as well as neighboring states. Their suppliers and customers buy and sell food products through an online platform. As a purchaser through the online system, there are no subscription fees, but as a seller, there can be a fee depending on the service package the seller subscribes to. Shipping is also handled by the seller.

The other food hub, named Puget Sound Food Hub (PSFH), operates in a more traditional business-to-business platform. PSFH purchases and contracts directly from farms, and then sells directly to restaurants and large volume purchasing customers. Unlike Food Hub Inc., PSFH handles the logistics for food products getting from producer to customer with its own fleet of delivery trucks. PSFH also has annual membership fees for all of its sellers (\$50 per year).

The next type of business model for local foods is a listing service. The concept of the listing service business model is to have multiple suppliers list their goods on a website for a nominal fee while providing the free shopping experience to the buyer. It is the responsibility of the producer who is listing on the website to provide the shipping for the product to the customer. A few of the listing services also allow their producers to promote their own CSAs.

One particular listing service business is Local Harvest. A point needs to be remade here, however. Local Harvest prides itself on providing local food... from a national perspective. Local Harvest allows a purchaser to determine what they want the term of local to be. Someone living in Washington State could potentially purchase a heritage turkey from North Carolina. The same buyer could also buy grass fed beef or organic potatoes from Skagit County.

The Blue Apron prides itself on providing local food meal plans. Their product offering includes providing locally sourced ingredients needed to cook two to four meals a week for two or four people per household. Ingredients are sourced through a corporate purchasing arm, packaged and then shipped to the customer. Households, not institutional accounts, are the primary target customer for The Blue Apron. Beyond food products, The Blue Apron also sells non edible items such as cooking utensils and aprons.

The last type of business model is local grocery stores. While there are multiple grocers in the area that sell local food, local food is not the primary focus of their business for many. This thesis initially focused on those grocers who *only* sold local products at their stores. That being said, the Skagit Valley Co-Op, located in Mount Vernon, Washington, was selling organic bananas, in the middle of February. Based on the USDA definition of local, there are no bananas plantations or farms within a 400-mile radius of that store. For The Skagit Valley Co-Op, a majority of their products are locally sourced by organic producers and artisans, but in order to compete with the other grocers in the area, some non-local products need to be sourced in order to be a one-stop-shop.

There are membership fees available (but not required) at the Co-Op. The membership fee also includes a share of ownership of the co-op. As is typical for a grocery store, The Skagit Valley Co-Op does not ship products to customers, but has a brick and mortar storefront and sells directly

to consumers. Raw foods, such as fruits, vegetables and grains are sold at the store, as well as processed products from local artisans, such as bread, jam, candles, lotions, and preservatives.

Figure 4.1 shows each company reviewed in the strategic map by row, and the criteria reviewed in each column. Figure 4.2 shows a condensed version of that map, combining each business model and the assigning a color code to each criteria. Red indicates that all of the businesses in that type of business model do not operate within the specified strategic category. Yellow indicates that some of the businesses within that business model operate within the specified category, and green indicates that all the businesses within that business model operate within that specific category.

After looking at the Condensed Strategic Map, service gaps were indicated by red and yellow color coded segments. The main areas that seemed to be underserved were the logistics areas, and the CSA-to-Customer segment. Combining these two gaps suggests that there may be an opportunity around providing local food products directly to consumers.

A few companies are currently filling this need in other areas around the country, such as Amazon Fresh and Pea Pod, but they are not currently servicing the I-5 corridor of Washington. Is it that the customer base cannot afford a local food delivery service? The next portion will look at the customer base in the area, the population, their average incomes, and an estimated grocery budget per county.

Figure 4.1 Local Farms and Local Food Business Strategic Map

Company	City	State	For Profit	Region Served	National	Annual Membership Seller	Logistics		
							Inhouse Logistics & Warehousing	Is Distributer - Intermediary	Seller Provided Logistics - 3PL
Ninety-Farms	Arlington	Washington	x	Puget Sound Area					
Fruitful Farm & Nursery	Arlington	Washington	x	Puget Sound Area					
Happy Little Farm	Conway	Washington	x	Puget Sound Area					
Millingwood Organics	Stevens	Washington	x	Puget Sound Area					
Hedlin Farms	Mt. Vernon	Washington	x	Puget Sound Area					
Puget Sound Food Hub	Seattle	Washington	x	Puget Sound Area		x	x	x	
Silvana Crossing	Silvana	Washington	x	Puget Sound Area					
Chinook Farms	Snohomish	Washington	x	Puget Sound Area					
Caruso Farms	Snohomish	Washington	x	Puget Sound Area					
Skipley Farm	Snohomish	Washington	x	Puget Sound Area			x		
Simple Produce	Stanwood	Washington	x	Puget Sound Area					
Freshly Doug Vegetables	Stanwood	Washington	x	Puget Sound Area					
EatWild.com	Tacoma	Washington	x	Puget Sound Area	x	x			
Food Hub	Portland	Oregon	x	West Coast		x			x
The Blue Apron	New York	New York	x	National	x	x		x	x
Local Harvest	Santa Cruz	California	x	National	x	x (w/out adds)			
Agritruue			x	National	x	x			
Skagit Valley Co-Op	Mt. Vernon	Washington		Skagit County		x			

Figure 4.1 Local Farms and Local Food Business Strategic Map - Continued

Company	CSA		Customer Base			Products Sold		Who Processes the Products		Listing Service
	CSA Pick Up	CSA Shipped to Customer	"Pick and Pay"	Direct to Consumer	Institutional Accounts	Raw Food Sales	Non-Edible Sales	Producer	Outsourced	
Ninety-Farms	x	x	x	x		x				
Fruitful Farm & Nursery	x		x	x		x	x	x		
Happy Little Farm	x	x	x	x		x				
Millingwood Organics	x	x		x		x				
Hedlin Farms	x	x	x	x		x				
Puget Sound Food Hub					x	x		x		
Silvana Crossing	x	x		x		x				
Chinook Farms		x		x	x	x	x			
Caruso Farms	x	x		x		x				
Skiplay Farm	x	x		x		x				
Simple Produce	x			x		x				
Freshly Doug Vegetables	x	x		x		x				
EatWild.com				x	x	x	x			x
Food Hub					x	x				x
The Blue Apron		x		x		x	x			
Local Harvest	x	x	x	x	x	x				x
Agritru			x	x	x	x				x
Skagit Valley Co-Op				x		x	x	x	x	

Figure 4.2 Condensed Strategic Map of Local Farms and Local Food Business

Firm Category and Count	Logistics				Customer Base			
	Annual Membership Seller	Annual Membership Buyer	Inhouse Logistics & Warehousing	Is Distributer - Intermediary	Seller Provided Logistics - 3PL	"Pick and Pay"	Direct to Consumer	Institutional Accounts
Farms 11	Green	Red	Red	Red	Red	Green	Green	Red
Food Hubs 2	Green	Yellow	Yellow	Yellow	Yellow	Red	Red	Green
Listing Services 3	Green	Red	Red	Red	Red	Yellow	Green	Green
Local Food Grocery Stores 1	Green	Green	Red	Red	Red	Red	Green	Red

Firm Category and Count	Products Sold			Listing Service	CSA	
	Raw Food Sales	Processed Food Sales	Non-Edible Sales		CSA Pick Up	CSA Shipped to Customer
Farms 11	Green	Red	Yellow	Red	Yellow	Yellow
Food Hubs 2	Green	Yellow	Red	Yellow	Red	Red
Listing Services 3	Green	Green	Yellow	Green	Yellow	Yellow
Local Food Grocery Stores 1	Green	Green	Green	Red	Red	Red

4.2 Customer Base

As mentioned previously, this study focuses on King, Snohomish, Skagit, and Island Counties in Washington State. Returning to Table 3.1, the figures show two important points: One, King County has the largest population out of the four target counties, and two, it also has the largest median income of the four target counties, and it isn't by a small amount either. The Estimated Local Food Spend per County is an estimated figure to provide content to and guide the discussion regarding who and where to sell products.

Table 4.1 Estimated Local Food Spending for Selected Counties 2012

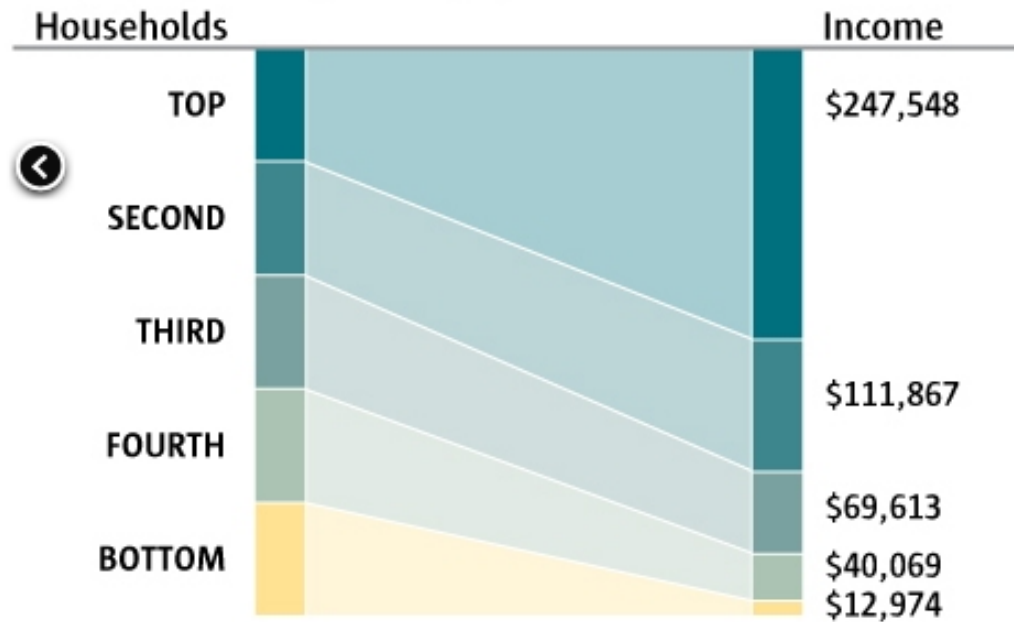
County name	Total Population	2012 Median Income	Average Individuals Grocery %	Per Household	Estimated Grocery Spend per County	Estimated Local Food Spend (x 0.4%)
Island	78,506	\$55,090.68	5.6%	2.35	\$103,062,612.21	\$412,250.45
King	1,931,249	\$68,313	5.6%	2.44	\$3,027,878,811	\$12,111,515
Skagit	116,901	\$56,443	5.6%	2.57	\$143,774,511	\$575,098
Snohomish	713,335	\$64,033	5.6%	2.67	\$958,023,376	\$3,832,094
Totals	2,839,991				\$4,232,739,309	\$16,930,957

Another chart, published by The Seattle Times shows income distribution in the Seattle Metro-Area (different than the I-5 corridor of the target counties) by quintiles and the income disparity associated with each of those quintiles. The figure shows that though income inequality exists in the area, the income exists, and more importantly, the two figures combined show that King County indeed has a large amount of income.

The fact that King County makes more money than other target areas matters because if an individual or family is willing to purchase five percent more for food products, or pay any type of premium for a food product, extra income needs to be available to pay for it. That is not to say that the other counties have individuals who would be able to afford it, but perhaps the best chance for success exists within King County. Business expenses may also be larger in King County the other, less populated counties in the target area of research.

Figure 4.3 Income chart for Seattle Metropolitan Area 2013

Each group represents approximately 60,000 households



Source: U.S. Census Bureau, 2013

GARLAND POTTS / THE SEATTLE TIMES

(Balk 2014)

The next part of the process then, is to come up with a few potential business models that could transport the local food to the people who want to pay more for it.

4.3 Business Ideation and Eureka Moments

There are three business ideas proposed in this section that could fill the gap of local food delivery to consumers. The business idea are examined from a bird's view. Preparing an in-depth business plan to be considered for a business loan, angel investors, or other venture capitalist was beyond the scope of this thesis. Advantages and disadvantages of each business model will be listed out as well. In addition to explaining each of these business ideas, a brief financial overview of each model will be provided, explaining basic startup costs, monthly operating costs, and how monthly revenues were calculated (see Appendix B for full tables of various business models). Lastly, the net present value over six years of each business model, based on the assumptions and constraints within the model, are compared and reviewed. The business ideas are:

- Micro Farming and Community Involvement Website
- Non Profit Community Garden/Farm Initiative with Produce Delivery
- CSA Delivery with Logistics and Digital Ordering

The tables below summarizes various parameters for estimations on revenues, costs, and growth. The table also defines what those parameters are for the lowest feasible case, the most likely case, and a best case scenarios for each business model.

Table 4.2 Micro Farming Website – Estimated Revenue and Cost Parameters

Parameter	Lowest Feasible Case	Most Likely Case	Best Case
Revenue Estimation	With the estimated start up costs established, the revenues were estimated to break even at period 1 and grow at 5% annually.	The first months revenue was calculated, and assuming the growth model from the previous case, calculated so that the first year's revenue would be 0.75% of the total estimated market value.	The first months revenue was calculated, and assuming the growth model from the previous case, calculated so that the first year's revenue would be 1% of the total estimated market value.
Shipping Reimbursement	25% of revenue received from products being sold on the site will go back to the sellers as a shipping	Same as Lowest Feasible Case	Same as Lowest Feasible Case
Website/App Development	In a discussion with Appster, a San Francisco based company, a rough ball park figure was given of \$150,000 for this idea to get off the ground and running. The actual figure could be more or	Same as Lowest Feasible Case	Same as Lowest Feasible Case

Table 4.3 CSA Delivery - Estimated Revenue and Cost Parameters

Parameter	Lowest Feasible Case	Most Likely Case	Best Case
Revenue Estimation	Price per CSA Share delivered is set at \$3.49. Given the start up costs, and monthly expenses, the model was set to break even at month 1 and grow at 5% annually. Once the monthly revenue break out was established, the Delivery and Listing Fees was divided by 3.49 and rounded up to the nearest whole number to establish how many shares would need to be delivered (600 shares). The other revenue streams were calculated around the assumption that the delivery and listing fees would be 75% of the total business.	The expected case model assumes that 350 additional shares could be delivered per month (a total of 950 shares). That was multiplied by the delivery fee of 3.49. The other revenue streams were calculated around the assumption that the delivery and listing fees would be 75% of the total business.	The expected case model assumes that 350 additional shares could be delivered above the expected case per month (a total of 1300 shares). That was multiplied by the delivery fee of 3.49. The other revenue streams were calculated around the assumption that the delivery and listing fees would be 75% of the total business.
Variable Cost Growth	About a 1/3 of the monthly expenses are for online marketing and web hosting. 2/3 are for insurance and fuel. The costs assume that the marketing and webhosting will grow as the business grows (5%). The fuel and insurance will be about 2/3 the total cost of the previous month.	About a 1/3 of the monthly expenses are for online marketing and web hosting. 2/3 are for insurance and fuel. The costs assume that the marketing and webhosting will grow as the business grows (5%). The fuel and insurance will be about 2/3 the total cost of the previous month.	About a 1/3 of the monthly expenses are for online marketing and web hosting. 2/3 are for insurance and fuel. The costs assume that the marketing and webhosting will grow as the business grows (5%). The fuel and insurance will be about 2/3 the total cost of the previous month.
Website Development	Looking into Godaddy.com's website design services, the estimated costs to build a site that would fit the needs of this model was around \$15,000.	Same as Lowest Feasible Case	Same as Lowest Feasible Case
Delivery Truck	Refrigerated trucks, used and new, are available online for purchase. The estimated cost was around \$43,500 as of 2016.	Same as Lowest Feasible Case	Same as Lowest Feasible Case

Table 4.4 Non-Profit Community Garden - Estimated Revenue and Cost Parameters

Parameter	Lowest Feasible Case	Most Likely Case	Best Case
Low Operating Costs	Operating a community garden is labor intensive. The model assumes that volunteer work will be plentiful in order to maintain the grounds in a presentable, welcoming environment.	Same as Lowest Feasible Case	Same as Lowest Feasible Case
Land Acquisition	As of 2016, there was a 5 acre plot available in Maple Valley, WA for sale listed at \$185K.	Same as Lowest Feasible Case	Same as Lowest Feasible Case
Land Preperation, Fencing, and Plot Creation	Bid out to JF Tractor and Land Maintenance for approx \$3,000	Same as Lowest Feasible Case	Same as Lowest Feasible Case
Truck Purchase	A gently used refrigerated delivery truck to deliver produce to the local food bacnk cost around \$34,500 from Commercialtrucktrader.com	Same as Lowest Feasible Case	Same as Lowest Feasible Case
Green House Construction	Lastly, the three green houses could be constructed, based on costs from CanopiesandTarps.com, for about \$1,600	Same as Lowest Feasible Case	Same as Lowest Feasible Case
Land Upkeep Costs Per Month	The \$50 per month would be used for land management tools and PPE. Products could either be donated or purchased	Same as Lowest Feasible Case	Same as Lowest Feasible Case
Revenue Estimation	Revenues were calculated so that at month 1 of operation, the cash after expenses would be \$0.	City and community donations is anticipated to be \$500 greater per month at month 1 of operation over the Base case. All plots are expected to be sold at month 1. Monthly grant funding from various sources is also expected to be \$500 more per month than the base case. Tiered services are estimated to be \$100 more a month than the base case.	City and community donations is anticipated to be \$500 greater per month at month 1 of operation over the Expected case. All plots are expected to be sold at month 1. Monthly grant funding from various sources is also expected to be \$500 more per month than the expected case. Tiered services are estimated to be \$100 more a month than the expected case.

Table 4.5 All Business Models - Estimated Revenue and Cost Parameters

Parameter	Lowest Feasible Case	Most Likely Case	Best Case
Additional Labor Assumption	Most labor is assumed to be provided solely by the entrepreneur.	Same as Lowest Feasible Case	Same as Lowest Feasible Case
Growth Rate	5% annual growth rate estimated	Same as Lowest Feasible Case	Same as Lowest Feasible Case
Business Loan and Rate	Start Up Capital is assumed to be from a business loan with an annual interest rate of 8%. The model is estimated to pay back the start up capital in a period of three years.	Same as Lowest Feasible Case	Same as Lowest Feasible Case

4.3.1 Micro Farming and Community Involvement Website

As this was the initial, serendipitous idea that started this research, it seemed fitting to start off this section by fleshing out the starting concept.

Uber is one of the largest ride sharing companies to date, yet they do not own any cars. Airbnb is one of the largest lodging companies for travelers, yet they do not own any hotels or inns. Alibaba, another large online retailer, does not own any hard assets. Facebook is one of the largest digital content owners in the world, yet they do not create any content. This Micro-Farming and Community Involvement website would be similar, in that it would provide locally grown product and locally made products, yet not own any land.

Local food would be grown in communities where local food is wanted. Community members who also already have a backyard farm or micro-farm, or even an overly ambitious tomatoes patch can connect with community members online who are looking for local products. The idea of locality can be defined by the seller and buyer by setting a search area within the app from a 5-mile radius up to 500-mile radius. There would not be any subscription fees for either the buyer or the seller to list and purchase from the site. Revenue would instead be generated similarly to the Etsy online storefront, in that a small percentage per dollars sold would be taken from the

seller for listing on the site. A portion of that percentage taken would then be returned back to the seller to help cover shipping costs. At its best, the model would allow community members to interact, barter, trade and sell within short, commutable distances, thus negating the need for third party logistics or logistical costs incurred onto the buyer. A mobile app for the site would also be available and free to use for both buyers and sellers. Revenue would be generated from ad traffic.

Various resources would also be included in the website, providing tutorials on how to start a vegetable garden, green house, or other micro farming or urban farming system. Social interaction for tips, and questions and answers could also be provided. Partnering with “local” university extension programs, such as the WSU (Washington State University) Master Gardeners Foundation, could be beneficial to assisting those interested in micro farming and urban agriculture to be successful.

As well as partnering with local educational programs, reaching out to the community in actual farmers’ markets would also be beneficial. At the farmers’ market, consumers could learn about the idea, as well as the producers, to both parties buy and sell products during the rest of the week.

The Micro-Farming website could be seen as another listing service, but it would be more than what currently exists. Unlike the other listing services, the site would allow for users to buy and sell single items to members of their community at their leisure as opposed to a blanket advertisement or only being able to shop for a local CSA subscription.

The advantages of this business idea is that it could potentially go nation-wide, which would capture more the local foods movement than just what is in my “local” area. Another

advantage is that it could be a relative low cost model (costs of hosting and web/app development) when compared to a traditional brick, mortar, and other hard assets type of business model.

A disadvantage is that it would still require the seller to ship products to the customer, either in person, or through a third party logistics provider. Another disadvantage is that while everyone can farm, not everyone is a farmer (see Appendix A). There is a skill with food production and even though this idea looks good on paper, in actual practice, it may be extremely difficult to get others involved with food production in their own yard, especially the using of their own time as needed for upkeep associated with the garden. Other drawbacks or risks include protecting buyers from fraudulent transactions, ensuring quality and quantity from sellers of products, and a food safety risk – what if individuals get sick from eating their neighbors produce?

The estimated, basic, startup costs include a domain name registration from GoDaddy.com, graphic design for website and company logos, and social webstore coding contracted from Appster. In a recent discussion with Appster, and a brief explanation of the idea, the estimated developments costs were \$120,000 (Concepcion 2016).

The monthly operating costs associated with this model were webhosting provided by Godaddy.com (\$85 a month), online marketing expenses of \$250 with Dex Media, website management and bug fixing provided by GoDaddy at \$150 a month, and a customer shipping reimbursement total of about \$1,600. The shipping reimbursement is calculated by taking the monthly revenue from sales on the website and multiplying that figure by 0.25. The labor for this business idea, outside of app and website development is assumed to be provided solely by the entrepreneur.

The Farmers' Market Booth fee is estimated to be a total of \$650. That fee is estimated based on Seattle's daily rate for a booth space at their market of \$45 a day or 6-9% of sales, whichever was greater.

The estimated monthly sales include advertisement revenue for local farm stores of \$350, commission sales from the website of \$6,400 and the sale of personal agricultural products of \$350, coming to a total monthly revenue of \$7,100. These revenue figures were calculated by assuming that 90% of the Total Monthly Revenue would come from the commission of sales from the website, 5% from advertisements, and 5% from the entrepreneur selling their own products.

As mentioned previously in the methods section, the Total Monthly Revenue was calculated using Excel's Solver capability, and finding a solution so that the first month's Cash After Payments value was \$0.00. The payments included the listed monthly operating costs, the loan payment, and any additional principle added to the payment. For this business model, the Total Monthly Revenue at month 1 is about \$7,100.

Using these figures, with a business loan rate of 8% and an annual growth rate of 5% compounded monthly over months, the net present value of the business model is calculated to be roughly \$184,000. A break out of these costs and revenues is listed below.

Table 4.6 Micro-Farming and Community Involvement Website Costs and Revenues

Start Up Costs	
Domain Name (GoDaddy.com)	\$ 1.99
Social Webstore Coding (Appster.com)	150,000.00
Digital Graphic and Company Design	1,500.00
Farmers' Market Booth (Summer)	650.00
TOTAL START UP COSTS	\$ 152,151.99

Monthly Revenue Plan		% of Total Revenue
Ad. Revenue from Farm Stores	\$ 353.89	5%
Monthly Revenue from Sales	\$ 6,370.10	90%
Sale of Own Ag. Products	\$ 353.89	5%
Total Monthly Revenue	\$ 7,077.89	100%

Lowest Feasible Case - Revenue Stream	
Ad. Revenue from Farm Stores	\$ 353.89
Monthly Revenue from Sales	\$ 6,370.10
Sale of Own Ag. Products	\$ 353.89
Total Monthly Revenue	\$ 7,077.89
Net Present Value	\$183,428

Monthly Operating Costs	
Web Hosting (GoDaddy.com)	\$ 85.00
Online Marketing (Dex Media Adds)	500.00
Website Management and Bug Fixing (GoDaddy.com)	150.00
Shipping Reimbursement	1,592.52
TOTAL MONTHLY OPERATING COSTS	\$ 2,327.52

4.3.2 *A Non-Profit Community Garden with Local Food Delivery*

If the research concerning the socioeconomic benefits of urban agriculture are true, in that it reduces crime, reduces vandalism and drug use, and also increases home properties, then the strategic placement of a community garden could be beneficial to the members of the community. Local restaurants, residents, food banks, and local outreach programs could use the area, once made arable, to produce their own locally grown products. The community garden would be or could be a focus for nearby residents, schools, and restaurants.

Plots could be rented out by season or month, with discounts provided if multiple plots are rented by the same customer. Additionally, a tiered service package could also be provided. The various levels in the tiered package could include anything as basic from watering the garden plot as needed, to providing all of the services regarding a garden including planting, weeding, watering, harvesting, packaging and delivery. Greenhouses could also be constructed and sold for seasons for higher prices².

The advantages of this model are primarily the presumed adoption of the community farm and acceptance of the socioeconomic impact theory regarding the implantation of urban agriculture. Seattle and its governing officials are interested in the protection of environment, assisting the homeless and destitute, and increasing the overall well-being of its citizenry (Murray 2015). Obtaining public funding for the project, volunteers for operations, and general support, on the face of the idea, would not be terribly difficult.

Operationally, commuting anywhere in Seattle for anything would be a nightmare. Specific lack of experience dealing the cash flow and rules and regulations regarding a non-profit enterprise could be a barrier, but not something that would impede progress of the community garden.

² These green houses would be used only for food production and food production only. Recreational marijuana, as a personal preference, would not be allowed to be produced on the community farm.

Another disadvantage would be the potential set up for a community garden. As Seattle becomes more and more dense, arable land would either need to be created by tearing up concrete lots or by creating raised beds and importing dirt. There may be a lot available for sale that fits the right requirement to start a community garden, but work to set up the plot correctly would take some time. One could assume that another disadvantage would be the lack of revenue that would be generated by the community garden. However, that disadvantage could be outweighed by the ability to bring in donations.

The startup costs would include a five-acre plot, a water retention system, land preparation, a delivery truck, fencing around the perimeter, and green house construction. There is about a five acre plot in Maple Valley listed on Trulia.com at \$185,000. The water retention system would include large rain water barrels attached with pipes to slanted, metal roofed structures. The rain barrels would then be tapped so that the water could be used by patrons to water their garden plots. The land preparation and plot creation, which would include hiring out a tractor to roto-till plots for gardens was estimated to be about \$600 with fencing costing about \$2,500 from a local land maintenance company (JF Tractor and Land Maintenance). A gently used refrigerated delivery truck cost around \$34,500 from Commercialtrucktrader.com. Lastly, three greenhouses could be constructed, based on costs from CanopiesandTarps.com, for about \$1,600. The total estimated startup costs total about \$225,000.

Monthly Operating Costs were estimated to be about \$50.00 a month. Any land maintenance and grounds keeping that would need to be done, would be performed by a volunteer workforce. Operationally, the managing of plots, used or unused dependent upon services ordered, would either be done by the renter or by a volunteer staff. Though the actual dollar amount for a monthly operating costs could be much higher, perhaps it is safe to say that this model has the

lowest operating costs out of the models listed. The mortgage payment, in this model, is wrapped in the business loan, and thus included in the monthly loan payment.

When Excel’s Solver is run, the Total Monthly Sales comes to about \$7,000, with \$4,500 coming from city and community donations, \$560 in garden plot rentals, about \$400 in tiered service packages monthly sales, and about \$1,600 in monthly grant funding. With donations estimated to grow at 5% annually, the net present value of this model comes out to about \$260,000.

Table 4.7 Non-Profit Community Garden with Local Food Delivery Costs and Revenues

Start Up Costs	
5.11 Acres in Maple Valley	\$ 185,000
Water Retention System	\$ 1,200
Land Preparation and Plot Creation	\$ 600
Delivery Truck	\$ 34,500
Fencing	\$ 2,500
Green House Construction (3)	\$ 1,647
TOTAL START UP COSTS	\$ 225,447.00

Monthly Revenue Plan		% of Total Revenue
City and Community Donations	\$ 4,472.99	63%
Plot Rent Sales	\$ 560.00	8%
Monthly Grant Funding	\$ 1,630.41	23%
Tiered Service Packages	\$ 425.32	6%
Total Monthly Revenue	\$ 7,088.72	100.00%

Monthly Operating Costs	
Volunteer Grounds Keeping	\$ -
Land Upkeep Costs	\$ 50.00
TOTAL MONTHLY OPERATING COSTS	\$ 50.00

Total Garden Plot per Acre Table	
Square Feet per Acre	43,560
Areable Acres in Community Garden	4
Total Arable Square Feet	174,240
Square Feet per Garden Plot Needed	936
Total Plots Available	186
Annual Garden Fee	\$40
Total Garden Plot Revenue	\$7,440
Monthly Garden Plot Revenue	\$620.00

Lowest Feasible Case - Revenue Stream	
City and Community Donations	\$ 4,472.99
Plot Rent Sales	\$ 560.00
Monthly Grant Funding	\$ 1,630.41
Tiered Service Packages	\$ 425.32
Total Monthly Revenue	\$ 7,088.72
Net Present Value	\$ 259,244.37

Business Loan Rate	8%
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4.3.3 A CSA Delivery Company

This business model would not only deliver CSA shares to their respective subscribers, but also sell local artisan and other food products to consumers. The first part of the model would be a website where individuals can browse and select CSA’s of their choosing. Those farmers and producers who sell CSA’s would incur a delivery fee of \$3.49 per share sold (Ambrose Family Farm 2016) upon sale to help cover logistical costs. For the artisan products, or non CSA type goods, there would be two options: an annual listing fee, or having ads on their product pages.

Customers would order products or subscribe to the CSA's from the website, and the those products ordered would be delivered to them with a company truck. Customers would also incur a delivery fee. CSA goods could be picked up at the producer's farm and then stored at the warehouse for a time being, prior to routes being organized and products distributed to buyers. The same could also be done for non CSA products. It needs to be clarified that product selection would not be limited to commodity or staple type goods, but would also showcase rare, organic high-end food items (i.e. lamb, honey, goat cheese, etc.) Other services could also be offered as part of a tiered package, including invoicing and billing for products, marketing to local restaurants and grocers, on site inventory management, and on site packaging of food products.

The advantages of this model revolve around web functionality and ease of access for purchasing local food. It would also promote local agriculture and connect individuals with the producers of their food. This model directly fills the gap as seen on the strategic canvass, in that it delivers CSA and other food products to consumers.

Thinking conceptually about this model, it could be very difficult to maintain enough of a sales volume for food delivery to sustain a truck (or fleet of trucks) and overhead for the business model. It could be that the service gap identified earlier exists because individuals do not want to have food delivered to them, but prefer to stick to the traditional model of grocery shopping.

Website development and graphic design costs were estimated to be \$15,000 through vWorker.com. A large refrigerated truck with logo placement from CommercialTruckTrader.com was estimated to be about \$44,000. The total startup costs came to an estimated total of \$59,450.

The monthly operating costs include storefront website hosting from Go Daddy at \$85, fuel for the delivery truck estimated at \$350, auto insurance of \$250 a month, and online marketing

costs of \$250. The total monthly operating costs come to about \$935 for this model. Fuel cost were also assumed to increase by 5% annually.

When running the model, the estimated Monthly Revenue came out to about \$2,800, with \$140 in advertisement revenue for local ag supply companies, \$560 in tiered business services and \$2,100 in delivery and membership listing fees. The net present value of this business model, given the constrains and limitations therein, comes out to about \$76,000, serving approximately 750 CSA shares monthly.

Since this model is based off of CSA subscriptions in the area, it was important to know how many CSA were potentially available. Approximately, there were 210 CSA in the area of study. Conservatively assuming that each CSA has about 40 shares available a year, that would yield an available market of 8,400 shares to service. A typical CSA share usually runs from June through November, and in some cases, there are winter shares available. In the winter months, this business model could also be used to deliver year round products such as eggs, cheese, baked goods by artisans, beef and other protein products. The revenue stream would probably have some highs and lows throughout the year, which has been accounted for by a conservative estimate of the CSA shares available.

Table 4.8 CSA Delivery Costs and Revenues

Start Up Costs		Monthly Revenue Plan		% of Total Revenue
Website Development	\$ 15,000.00	Delivery and Listing Fees	\$ 2,093	75%
Graphic Design and Logo Development	500.00	Ad. Revenue for Local Ag Supply Businesses	139.56	5%
Cost of Refrigerated Truck	43,500.00	Tiered Business Admin Services for Vendors	558.22	20%
Logo Placement on Truck	450.00	Total Monthly Revenue	\$2,791.11	100%
Deposit on Warehouse Space				
TOTAL START UP COSTS	\$ 59,450.00			

Monthly Operating Costs		Lowest Feasible Case - Revenue Stream	
Website Hosting	\$ 85.00	Delivery and Listing Fees	\$ 2,093.33
Fuel for Delivery Truck	350.00	Ad. Revenue for Local Ag Supply Businesses	\$ 139.56
Auto Insurance	250.00	Tiered Business Admin Services for Vendors	\$ 558.22
Online Marketing Costs	250.00	Total Monthly Revenue	\$ 2,791.11
TOTAL MONTHLY OPERATING COSTS	\$ 935.00	Net Present Value	\$ 75,721

4.3.5 Review of Business Models

After the net present value of each business model was calculated, the next step was to create the lowest feasible case scenario, the most likely case scenario, and best case scenario for the monthly revenue streams. The NPV's for each scenario for each business model were calculated and compared to each other. As another metric, the Total Local Food Market Estimate for the targeted counties was divided by the first year's revenue of each case of each business model. This calculated figure put the total revenue of each case into a perspective of the target market. I have called this metric the Market Value Comparison.

For each business model, the lowest feasible case scenario NPV was derived by finding what the needed revenue would be in month 1 of operation to cover the listed expenses within the model. These NPVs were stated in the previous section for each model.

Micro Farming and Community Involvement Website: The most likely case NPV for this model was calculated by using Excel's Solver capability. For the lowest feasible case, the estimated market share was around 0.5% for the targeted area. For the most likely case, Solver was used to calculate what the first month's revenue stream would need to be, given the built in growth of the model, to have the first year's revenue be 0.75% of the targeted market. The NPV for the most likely case is around \$365,000. This same methodology was also used to determine the best case scenario, but calculating for a market share of 1.0% yielding a NPV of about \$553,000.

Table 4.9 Micro-Farming Website Revenues and NPV's by Case

Lowest Feasible Case - Revenue Stream	
Ad. Revenue from Farm Stores	\$ 353.89
Monthly Revenue from Sales	\$ 6,370.10
Sale of Own Ag. Products	\$ 353.89
Total Monthly Revenue	\$ 7,077.89
Net Present Value	\$183,428

Most Likely Case - Revenue Stream	
Ad. Revenue from Farm Stores	\$ 518.27
Monthly Revenue from Sales	\$ 9,328.83
Sale of Own Ag. Products	\$ 518.27
Total Monthly Revenue	\$ 10,365.37
Net Present Value	\$ 363,447

Best Case - Revenue Stream	
Ad. Revenue from Farm Stores	\$ 691.02
Monthly Revenue from Sales	\$ 12,438.44
Sale of Own Ag. Products	\$ 691.02
Total Monthly Revenue	\$ 13,820.49
Net Present Value	\$ 552,642

CSA Delivery: In all scenarios, a revenue stream consisting of 75% Delivery and Listing Fees, 5% Advertising for Local Ag Supply Business, and 20% Tiered Business Admin Services for Vendors is assumed.

Once the lowest feasible case scenario was discovered, the next step was to see how many deliveries the model yielded by charging \$3.49 per CSA share delivered. For this business model, the lowest feasible case scenario showed that approximately, \$2,100 a month would need to be earned in CSA deliveries. Assuming the \$3.49 per delivery, that rounded up to about 600 CSA shares. Also assuming that there are 40 shares per farm, this means that 15 farms could be serviced with this model. This model would show a Net Present Value of \$75,721.40

The expected model anticipates that about 24 farms are participating in the program, showing approximately \$3,300 earned in delivery fees. Taking that number and assuming the share

in the total revenue stream as mentioned earlier, it would show a total of about \$4,400 earned a month. Also assuming a similar growth pattern as the previous scenario that leads the most likely case for this business model to have a Net Present Value of \$192,000 over a six year time frame.

The best case scenario assumes that 33 farms are participating in the delivery program yielding about \$4,500 a month in delivery revenue. This would show a total monthly revenue of around \$6,000. With the business growing at the same rate as the prior to cases, this model estimates a Net Present Value of about \$308,000 over a six year time frame.

Table 4.10 CSA Delivery Revenues and NPV's by Case

Lowest Feasible Case - Revenue Stream	
Delivery and Listing Fees	\$ 2,093.33
Ad. Revenue for Local Ag Supply Businesses	\$ 139.56
Tiered Business Admin Services for Vendors	\$ 558.22
Total Monthly Revenue	\$ 2,791.11
Net Present Value	\$ 75,721

Most Likely Case - Revenue Stream	
Delivery and Listing Fees	\$ 3,315.50
Ad. Revenue for Local Ag Supply Businesses	\$ 221.03
Tiered Business Admin Services for Vendors	\$ 884.13
Total Monthly Revenue	\$ 4,420.67
Net Present Value	\$ 191,706

Best Case - Revenue Stream	
Delivery and Listing Fees	\$ 4,537.00
Ad. Revenue for Local Ag Supply Businesses	\$ 302.47
Tiered Business Admin Services for Vendors	\$ 1,209.87
Total Monthly Revenue	\$ 6,049.33
Net Present Value	\$ 307,628

Case	CSA Shares Serviced Monthly	Price Per Share	Delivery Revenue
Lowest Feasible	600	\$ 3.49	\$ 2,093
Most Likely	950	\$ 3.49	\$ 3,316
Best	1300	\$ 3.49	\$ 4,537

Non-Profit Community Garden: This business model is heavily dependent upon donations from the community, city, and other grants in order to cover operational and loan costs. With the lowest feasible case scenario already discussed, an expected revenue stream could consist of slightly higher donations (around \$5,000) and grant incomes (around \$2,000) as well as selling out available garden plots. Tiered Service Packages would also increase slightly (\$525) showing a total monthly revenue at month 1 of about \$8,300. With monthly grant and donation revenues increasing at the same rate as the previous case, the net present value of this the most likely case is estimated to be about \$420,000.

The best case scenario shows a further increase in donation and grant funding (total monthly revenues of about \$5,500 and \$2,600 respectively) as well as an increase in Tiered Service Packages (\$630). The monthly revenue at month 1 for this model and case is about \$9,400, showing a net present value of \$417,760.18.

Table 4.11 Non-Community Garden Revenues and NPV's by Case

Lowest Feasible Case - Revenue Stream	
City and Community Donations	\$ 4,472.99
Plot Rent Sales	\$ 560.00
Monthly Grant Funding	\$ 1,630.41
Tiered Service Packages	\$ 425.32
Total Monthly Revenue	\$ 7,088.72
Net Present Value	\$ 259,244.37

Most Likely Case - Revenue Stream	
City and Community Donations	\$ 4,972.99
Plot Rent Sales	\$ 620.00
Monthly Grant Funding	\$ 2,130.41
Tiered Service Packages	\$ 525.32
Total Monthly Revenue	\$ 8,248.72
Net Present Value	\$ 340,606.47

Best Case - Revenue Stream	
City and Community Donations	\$ 5,472.99
Plot Rent Sales	\$ 620.00
Monthly Grant Funding	\$ 2,630.41
Tiered Service Packages	\$ 625.32
Total Monthly Revenue	\$ 9,348.72
Net Present Value	\$ 417,760.18

Table 4.11 shows each of these business models and their respective net present values for each case. Table 4.12 compares the first year sales to the estimated local food spend in 2012 for the targeted counties.

Table 4.12 Estimated Net Present Values of Business Models

Business Models	Net Present Values		
	Lowest Feasible Case NPV	Most Likely Case NPV	Best Case NPV
Micro-Farming Website	\$183,430	\$ 363,449	\$ 552,644
CSA Delivery	\$75,721	\$ 191,706	\$ 307,628
Non-Profit Community Garden	\$259,244	\$ 340,606	\$ 417,760

Table 4.12 Target Market Valuation of Business Models – 2012

Business Models	Market Value Comparisons		
	Lowest Feasible Case Market Value Comparison	Most Likely Case Market Value Comparison	Best Case Market Value Comparison
Micro-Farming Website	0.512%	0.750%	1.000%
CSA Delivery	0.202%	0.320%	0.893%
Non-Profit Community Garden	0.512%	0.596%	0.676%

The business model with high or the highest net present values per each case appears to be the Micro-Farming Website. Each model could be scaled up to facilitate further growth, but the cost of expansion for each model is dramatically different. The Non-Profit Community Garden has a high land acquisition cost. These costs could be compensated for by local USDA Business Development grants and other local grants. The CSA Delivery system, while less expensive than land acquisition, would require capital for the procurement of delivery vehicles. Additional labor, insurance, and fuel costs would also need to be considered. The Micro-Farming Website appears to be the easiest to scale up for growth with the least amount of cost. In an discussion with Stephen Leafy, from Dex Media, concerning website development, he stated that it was like building a house. It is easier to build a large foundation to grow on, rather than having to build more foundation later. The initial costs for the site would need to be higher to pay for extensive capability to handle, potentially, hundreds of thousands of users and visitors, each with their own page within the site (Leafy 2016).

Combining the NPV of each business model and case, with the limitations and advantages of scaling up, allows for the models to be ranked according to individual preference. The Market Value Comparisons, when added to the business model evaluation, show the potential effectiveness of delivering to the target market.

While the percentages in the Market Value Comparison table seem realistic, the underlying importance of these figures is to consider how much work, capital, and time it would take in order to grow these percentages. Of the three business models, the electronic platform of the Micro-Farming Website would appear to be model in which the Market Value Comparison can grow the quickest and at the most affordable cost. The key to a quick growth, however, would be a site that can facilitate further growth and expansion easily without much re-work and site down time.

4.4 Conclusion of Chapter 4

Great ideas, if never put to good use, profit a man for naught. The idea, the serendipitous moment, needs to be expanded upon and researched. The use of competitive mapping, as listed in this thesis and cited by other works, is only a starting point. The strengths of characteristic mapping allow the creator, dependent upon how thoroughly researched the market players are, to see what the players are doing, how they are operating, and provides a looking glass into their target customers. A drawback of the competitive map is, to borrow and adage, “you don’t know what you don’t know.” Meaning that there could be other firms and or operating characteristics that exist that are not observed, simply because they are not being looked for or thought of. That could be overcome by enlisting a team of individuals to put together a map, or by networking with professionals currently in the field of study to fill in knowledge gaps.

Secondly, great ideas that are well researched profit a man nothing if the customers do not have any money in their pockets to support the businesses. Looking at the target market area, and

then identifying an estimated market value is critical within business development. The process can allow an entrepreneur to answer the question: could this idea be feasible given the market value?

Ideating business models helps the entrepreneurs discover if their model or idea is the best one out of a plethora of choices. Similar to the competitive mapping, the weakness is that the entrepreneur is limited only to the entrepreneur's capacity for creation. Ideating with others, and bouncing business ideas off of an established, respected network could also prove fruitful.

Lastly, the benefits of using Excel modeling and searching for the lowest feasible option, given certain market valuation estimates, allows for multiple ideas to be ranked according to comparable metrics, such as profitability, net present value, market share, and so on. Although modeling does not reflect reality precisely, it can create a ball park estimate, or create a view of how a certain business model will work out.

CHAPTER V: CONCLUSION

As the world's population continues to increase, demands on food production will also increase. Whether those demands come in the form of logistical solutions to feeding a growing populace, or the increase of production per arable acre, one thing is certain... people will need to eat.

In conjunction with a rising demand for traditional, large scale agricultural production, local food is growing both in national interest and as a financial market for business and entrepreneurs. In the past, when countries, including the United States, have had constraints placed upon them where large-scale agricultural production or agricultural trade have been hindered, small-scale local food production en masse has filled the void.

In recent history, large-scale agriculture production has been supplemented by local foods via farms participating in CSA programs, food hubs that act as an intermediary logistical solution for large scale production farms, grocery stores that sell only local food products, and listing services that act as a market place for local producers attempt to service the demand for local food products. Though each type of firm has its successes offering local food, there is a niche within this niche. A service gap has been identified where a potential individual consumer, with his or her own definition of the term "local", is unable to purchase what they specifically want according to their definition of "local" food without having some sort of logistical barrier.

This thesis has explored three business models which aim to fill that service gap. Each model utilizes the skills, interest and expertise of others in growing and or producing food on both a large and small scale. The Micro-Farming website enhances a sense of local by bringing to light many small famers, gardeners and artisans and connects them to consumers within the community who want to purchase their products. The CSA model aids in removing the logistical barrier of either picking up a CSA at the farm, or meeting at a drop site to pick up the CSA. For a small

delivery fee, the CSA Delivery lessens the barrier of delivery. It also may have the dual advantage of increasing interest in CSA's in the area serviced by providing delivery. The Non-Profit Community Garden plays on both the generosity and skill in gardening of a community to turn a five acre patch of grass into a luscious garden of produce.

Each business model's NPV was calculated under three cases: the lowest feasible case, the most likely case, and a best case scenario. The lowest feasible case scenario was forced to show a positive NPV by calculating a \$0.00 value for cash after expenses for month 1 of operation, and then growing at 5% annually. The conditions for the expected and best case scenarios were customized to each business models unique characteristics of operation. The first year of sales was compared to the estimated total market value (a market value comparison) to compare revenues and show the differing ranges of potential profitability across three business models and each case. Potential scalability was also considered.

Dependent upon the personal preference and interest of the entrepreneur, one business model may be more favorable over another. What is similar among these models is that each aims to fill a service gap within the local foods arena of the study area consisting of selected counties (and potentially beyond) in Washington State.

There are a few implications that this thesis presents which go beyond the scope of the thesis. The encompassing methodology of this thesis could be applied to almost any sector in business. Understanding the history of a market segment, the fleshing out of ideas, understanding the importance and favorability of tiering services and product offerings, could be used by any business or entrepreneur to look into new emerging markets. From a broad perspective, this thesis has shown a few business models that leverage the skill set and assets of the customers, rather than

obtaining and segmenting those skills and assets as a company. Uber and Airbnb are a couple examples of this type of business.

The competitive mapping and compacted competitive mapping exercises also show how to discover niche markets in a specific market. These analyses do not answer questions as to whether or not a business should be created for that niche, but simply state that the niche exists. That is where the business modeling comes into play. Creating models answers the question of possibility, when comparing it to the market value as a whole.

These few business ideas that were created are not the only ones that could work given the market conditions and parameters listed. A major limitation that presents itself within the thesis is the lack of execution. These models, without real world application, are only conceptual. Whether or not one, or all, of these models work in the market place has yet to be seen. So much of business success relies on proper execution. Another limitation among these models is that not all of the business costs are accounted for, which means that the feasibility of these business models is overstated. The costs that are stated are also time sensitive, and will more than likely increase in the future. This study is extremely time and area specific.

A few other things to consider is that the main gap identified with the condensed strategic map, i.e., logistical barriers for consumers of local food, was not fully satisfied. A solution that would allow for quick and affordable delivery of local food via a third party might assist in filling the gap more fully. Creating partnerships with other crowd sourcing logistic firms, such as Uber, may be a solution.

As food production changes, interest and demand in local food may also continue to evolve. Although the concept and application of local food production, or micro-farming en masse, or urban agriculture are not new, they are becoming rediscovered by many. The discovery is

promoted by a premium that buyers are wanting to pay. Discovering, establishing, and developing a business model that caters to local food growers and consumers now may prove profitable in the years to come.

With those years, however comes the emergence of competitors. With local food, there is a limited number of suppliers. As interest and demand for local food increases, so too does challenges of securing the limited supply and offering competitive prices. Finding ways to protect profit and earnings through maintaining a sustainable supplier base to achieve an upper hand in the industry is key for future success. Creating certifications, specific brands within the market, and employing other marketing tactics to ensure that the entrepreneurs supply base is loyal to a particular business, and maintaining business in such a way to prevent opportunistic behavior also play into the long term success of these business models.

As a backdrop and setting to this thesis is this fact: The world population and demand for production from agriculture will continue to grow. Whether or not food logistics in concert with gains in science and technology with food production solve this problem has yet to be seen. As responsible individuals within agribusiness, it is our responsibility to solve the 2050 problem. Creating a business model that allows local food producers to expand their reach and allows new producers to share and sell their crops and products within their community is a small, initial step towards stopping hunger, and could yet prove to be a much larger step in solving the 2050 problem.

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APPENDIX A

ANYONE CAN FARM, BUT NOT EVERYONE IS A FARMER

This is a journal that I kept over the summer when we first moved to Mount Vernon Washington. In it, I attempted to create a “Micro-Farm” or backyard garden to see how much produce could be grown and at what costs. This was my first attempt at gardening. As I started this thesis, my initial idea was to create a movement for backyard farmers to be self-sustaining in their communities with the aid of social media. These are the results of that initial attempt.

June 6th 2015

Put together the three tier planter box and placed in north side of back yard. Prior to, we had done some yard maintenance to open sunlight into the area. This included the tearing out of morning glory and English ivy, trimming of dead evergreen tree branches, and cleaning of back yard. Construction debris, weeds, fire pits, cigarette butts, beer bottle caps, and other refuse was also strewn about the area.

Once everything was put together, we planted string beans, sugar snap peas, and carrots (small and large).

For a house warming gift, we also received two tomato plants from the master gardener show at the WSU extension office. The cost was \$1.50 each.

We picked up two cedar barrels as well, unsure exactly of what to plant in them at the point, but some ideas being potatoes, zucchini, or cucumbers.

Cost break down

Planter Box	99.99
2 - 1/2 cedar barrels	80
Dirt & Compost	66.18
Tools	45.73
Seeds	Donated
Total	291.9

June 10th 2015

We decided to plant zucchini and cucumbers in the two cedar barrels. We also learned that additional nutrients will be needed to be added to the soil on a bi-weekly basis, as the water drains the planting soil of nutrients. We also changed our water schedule to every morning at 6:30 AM Pacific Standard Time.

June 13th 2015

First sprouts start to break the surface! We can see visual green sprouts in our corn and carrots. It is not uniform growth in all areas which leads me to believe that my watering is not uniform. I will need to be cognizant of that fact. I also started pulling a couple weed like sprouts out of my tomato plant pots.

Each Saturday, there is a farmer's market in town, walking distance away from our current home. Some of the farms I recognize from our drives out in the country. The Schuh farm sells really

voluptuous, juicy berries, some of the best I have ever had. The farmer's market here is interesting also, in that there seems to be an equal divide of artisans (both of food stuffs and arts and crafts), cooks and restaurants, farmers (crops, honey, dairy products, beef, and flowers). There are soap sellers, antique distributors, and fashion students selling creations, with tents next to fresh radishes, berries lettuce, which is next to a toy seller (bubble wands and hula hoops).

The WSU extension office and library also make an occasional appearance. There is a stand set up for local musicians of the semi-professional variety that come and play for the public. This last Saturday was a John Lennon cover artist who caught my ear and I thought was quite good.

Next to this music stand is a tent for the local Indian Food restaurants. Three weeks ago, the restaurant Taste of India, suffered from a catastrophic five alarm fire. The fire burned down two other local businesses. People from the community came and showed their support for their return either financially through purchasing some curry and rice or a gyro, or with vocal concern and optimism.

All in all, I would say that this farmer's market is very much a community gathering of artisans, artists, craftsmen, farmers, and individuals seeking for a sense of connection to their ideals of local. I'm not sure how to explain it further than that, but after going for a couple weeks, you see the same people there repeatedly, with their same dogs, purchasing from the same stands.

Perhaps once our crops are grown, I might be able to pitch a stand there and sell excess from our garden as well. We shall see.

July 12th, 2015

The last couple days have seemed to be especially rough on the zucchini plants. The leaves have started to turn brown, and I even found a few ants (7) on each of the leaves. It looks as though something has been eating them – wondering if I have bugs on these plants.

The mini carrots haven't done anything save for two or three sprouts, while the other carrots are growing like a forest. It's exciting to see such progress with them. Internally, it brings me pride to see "the fruits of my labor" as it were.

The two tomato plants, I was a little worried about as the leaves started to turn yellow, as if to die. I added a little miracle grow per the package instructions, and the plants came back like weeds. I now have two green tomatoes growing on one plant, and am hoping to have a few more soon. There have been plenty of flowers on both plants, so here is hoping that the tomatoes will start coming soon.

I look at our little plantar box, two tomato plants, and two bucket planters of zucchini plants (and slowly growing cucumbers), and I think about how little space it is taking up in my back yard. A few blocks north of my house, there is family that has used cement blocks and created squares in their front yard for a vegetable garden.

My mind races around this passion I have inside me, perhaps a little of the "prepper" attitude comes through with me that I haven't shared in the past, but I think of what has happened in Greece. In the news, people are telling newscasters that they can only withdrawal something like \$60 a day. There was another man who said that he hadn't eaten in two days.

Part of me aches for these people.

Another part shakes my head, not out of pity, but out of disgrace. Yes, they are going through hard times, but how many more people haven't eaten in their own country in days and only have

pennies to their name? There was one woman in Greece who mentioned that the rural communities are using food as currency (potatoes, squash, chickens, etc.) Is that something that could happen here in the US? I don't know.

What I do know is that I have a desire, a passion within me to grow food, and teach, or create a vehicle, a mechanism, something that can teach people to grow their own food, then create a commerce network that I can earn a profit off of. And perhaps I am drinking my own Kool-Aid here, but the truth of the matter is this.

There are so many different avenues I could take within the urban farming arena, or locally grown produce arena, and I want to do them all.

I want to create and sell full meals from my backyard hydroponics systems to people. I want to show people how to do this, teach classes on it, I want to create a network where communities can teach each other, feed each other, with what they can do within their own backyards. I have this vision in my head of communities thriving and surviving around urban agriculture, creating a firmer sense of belonging, and not of competition (partly because not everyone will be willing to or wanting to be a part of this).

I am not exactly sure what the final product is going to be, but I know that with more food available within communities, and a mechanism for communities to gather around food, there are benefits, and people stop going to bed hungry.

My goal is to feed the world. I feed the world by growing food that is accessible, we create accessible food by growing it local. Local being the backyard.

How do I make a living off of this, or at least make it sustainable financially?

August 2, 2015

My zucchini plants have this pattern where they grow their leaves, the leaves, start to die, new ones sprout up and then flower bloom... repeat. It could be that they are not getting enough water, or perhaps they don't have enough room to grow. I am planning on stopping by the WSU extension office with pictures and perhaps a sample of a leaf for them to determine what is going on. The fruit on one of my tomato plants has also begun to rot or rather, look as though an insect is taking exact measurements as to where to bore into all of my tomatoes. The other plant, which is right next to it, is doing perfectly well. I am unsure as to what might be causing the issue. Perhaps plant stress from repotting?

There is also a potato plant next to my downstairs neighbor's porch and it is flourishing. A while back, I transplanted one of the potato plants that was there to a spot that I thought was more fertile by the back fence. It has not flourished as much and I think it is because of the lack of sunlight. The other plant, with no water on its own, and full sunlight, is already blossoming flowers.

Speaking of flowers, the peas are flowering and already producing pods! I am excited about that. The carrots and corn are also growing "like weeds" and I am ever more excited to see them grow every day.

It is taking about 5 gallons of water for the garden (carrots, tomatoes, flower planters, corn, peas, beans, cucumber plant and zucchini). I am enjoying this and looking forward to harvest time.

APPENDIX B

**TABLES FOR NET PRESENT VALUATIONS ON BUSINESS MODELS
Micro-Farming Community Involvement Website Cost, Revenue and Net Present Value –**

The most likely case

Start Up Costs	
Domain Name (GoDaddy.com)	\$ 1.99
Social Webstore Coding (Appster.com)	150,000.00
Digital Graphic and Company Design	1,500.00
Farmers' Market Booth (Summer)	650.00
TOTAL START UP COSTS \$ 152,151.99	

Monthly Operating Costs	
Web Hosting (GoDaddy.com)	\$ 85.00
Online Marketing (Dex Media Adds)	500.00
Website Management and Bug Fixing (GoDaddy.com)	150.00
Shipping Reimbursement	2,332.21
TOTAL MONTHLY OPERATING COSTS \$ 3,067.21	

Business Loan Rate 8%

Monthly Revenue Plan	% of Total Revenue
Ad. Revenue from Farm Stores \$ 518.27	5%
Monthly Revenue from Sales \$ 9,328.83	90%
Sale of Own Ag. Products \$ 518.27	5%
TOTAL MONTHLY REVENUE \$ 10,365.37	100%

NET PRESENT VALUE \$363,447.30

Total Dollars transferred on site per month
Expected Case \$ 37,315.32

Micro-Farming Community Involvement Website Revenue and Cost Table

Period	Monthly Sales	Monthly Costs	Sales - Costs	Loan Payment	Principle Payment	Interst Payment	Additional Principle	Remaining Principle	Cash After Payments
0								\$ (152,151.99)	
1	\$ 10,365.37	\$ 3,067.21	\$ 7,298.16	\$4,750.36	\$3,767.71	\$982.65	0	(\$148,384.28)	\$ 2,547.80
2	\$ 10,404.24	\$ 3,075.95	\$ 7,328.28	\$4,750.36	\$3,792.05	\$958.32	0	(\$144,592.23)	\$ 2,577.92
3	\$ 10,443.25	\$ 3,084.73	\$ 7,358.52	\$4,750.36	\$3,816.54	\$933.82	0	(\$140,775.69)	\$ 2,608.16
4	\$ 10,482.42	\$ 3,093.54	\$ 7,388.87	\$4,750.36	\$3,841.19	\$909.18	0	(\$136,934.51)	\$ 2,638.51
5	\$ 10,521.72	\$ 3,102.39	\$ 7,419.34	\$4,750.36	\$3,865.99	\$884.37	0	(\$133,068.51)	\$ 2,668.97
6	\$ 10,561.18	\$ 3,111.27	\$ 7,449.92	\$4,750.36	\$3,890.96	\$859.40	0	(\$129,177.55)	\$ 2,699.55
7	\$ 10,600.79	\$ 3,120.18	\$ 7,480.61	\$4,750.36	\$3,916.09	\$834.27	0	(\$125,261.46)	\$ 2,730.25
8	\$ 10,640.54	\$ 3,129.12	\$ 7,511.42	\$4,750.36	\$3,941.38	\$808.98	0	(\$121,320.08)	\$ 2,761.06
9	\$ 10,680.44	\$ 3,138.10	\$ 7,542.34	\$4,750.36	\$3,966.84	\$783.53	0	(\$117,353.24)	\$ 2,791.98
10	\$ 10,720.49	\$ 3,147.11	\$ 7,573.38	\$4,750.36	\$3,992.46	\$757.91	0	(\$113,360.79)	\$ 2,823.02
11	\$ 10,760.69	\$ 3,156.16	\$ 7,604.54	\$4,750.36	\$4,018.24	\$732.12	0	(\$109,342.55)	\$ 2,854.18
12	\$ 10,801.05	\$ 3,165.24	\$ 7,635.81	\$4,750.36	\$4,044.19	\$706.17	0	(\$105,298.35)	\$ 2,885.45
13	\$ 10,841.55	\$ 3,174.35	\$ 7,667.20	\$4,750.36	\$4,070.31	\$680.05	0	(\$101,228.04)	\$ 2,916.84
14	\$ 10,882.21	\$ 3,183.50	\$ 7,698.71	\$4,750.36	\$4,096.60	\$653.76	0	(\$97,131.45)	\$ 2,948.35
15	\$ 10,923.01	\$ 3,192.68	\$ 7,730.34	\$4,750.36	\$4,123.05	\$627.31	0	(\$93,008.39)	\$ 2,979.97
16	\$ 10,963.98	\$ 3,201.89	\$ 7,762.08	\$4,750.36	\$4,149.68	\$600.68	0	(\$88,858.71)	\$ 3,011.72
17	\$ 11,005.09	\$ 3,211.15	\$ 7,793.95	\$4,750.36	\$4,176.48	\$573.88	0	(\$84,682.23)	\$ 3,043.58
18	\$ 11,046.36	\$ 3,220.43	\$ 7,825.93	\$4,750.36	\$4,203.46	\$546.91	0	(\$80,478.77)	\$ 3,075.57
19	\$ 11,087.78	\$ 3,229.75	\$ 7,858.03	\$4,750.36	\$4,230.60	\$519.76	0	(\$76,248.17)	\$ 3,107.67
20	\$ 11,129.36	\$ 3,239.11	\$ 7,890.26	\$4,750.36	\$4,257.93	\$492.44	0	(\$71,990.24)	\$ 3,139.89
21	\$ 11,171.10	\$ 3,248.50	\$ 7,922.60	\$4,750.36	\$4,285.43	\$464.94	0	(\$67,704.81)	\$ 3,172.24
22	\$ 11,212.99	\$ 3,257.92	\$ 7,955.07	\$4,750.36	\$4,313.10	\$437.26	0	(\$63,391.71)	\$ 3,204.70
23	\$ 11,255.04	\$ 3,267.38	\$ 7,987.65	\$4,750.36	\$4,340.96	\$409.40	0	(\$59,050.75)	\$ 3,237.29
24	\$ 11,297.25	\$ 3,276.88	\$ 8,020.36	\$4,750.36	\$4,368.99	\$381.37	0	(\$54,681.76)	\$ 3,270.00
25	\$ 11,339.61	\$ 3,286.41	\$ 8,053.20	\$4,750.36	\$4,397.21	\$353.15	0	(\$50,284.55)	\$ 3,302.84
26	\$ 11,382.13	\$ 3,295.98	\$ 8,086.15	\$4,750.36	\$4,425.61	\$324.75	0	(\$45,858.95)	\$ 3,335.79
27	\$ 11,424.82	\$ 3,305.58	\$ 8,119.23	\$4,750.36	\$4,454.19	\$296.17	0	(\$41,404.76)	\$ 3,368.87
28	\$ 11,467.66	\$ 3,315.22	\$ 8,152.44	\$4,750.36	\$4,482.96	\$267.41	0	(\$36,921.80)	\$ 3,402.07
29	\$ 11,510.66	\$ 3,324.90	\$ 8,185.76	\$4,750.36	\$4,511.91	\$238.45	0	(\$32,409.89)	\$ 3,435.40
30	\$ 11,553.83	\$ 3,334.61	\$ 8,219.22	\$4,750.36	\$4,541.05	\$209.31	0	(\$27,868.84)	\$ 3,468.85
31	\$ 11,597.15	\$ 3,344.36	\$ 8,252.80	\$4,750.36	\$4,570.38	\$179.99	0	(\$23,298.47)	\$ 3,502.43
32	\$ 11,640.64	\$ 3,354.14	\$ 8,286.50	\$4,750.36	\$4,599.89	\$150.47	0	(\$18,698.57)	\$ 3,536.14
33	\$ 11,684.30	\$ 3,363.97	\$ 8,320.33	\$4,750.36	\$4,629.60	\$120.76	0	(\$14,068.97)	\$ 3,569.97
34	\$ 11,728.11	\$ 3,373.83	\$ 8,354.29	\$4,750.36	\$4,659.50	\$90.86	0	(\$9,409.47)	\$ 3,603.93
35	\$ 11,772.09	\$ 3,383.72	\$ 8,388.37	\$4,750.36	\$4,689.59	\$60.77	0	(\$4,719.88)	\$ 3,638.01
36	\$ 11,816.24	\$ 3,393.65	\$ 8,422.58	\$4,750.36	\$4,719.88	\$30.48	0	\$0.00	\$ 3,672.22

Micro-Farming Community Involvement Website Revenue and Cost Table - Continued

37	\$	11,860.55	\$	3,403.62	\$	8,456.93	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,456.93
38	\$	11,905.03	\$	3,413.63	\$	8,491.40	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,491.40
39	\$	11,949.67	\$	3,423.68	\$	8,525.99	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,525.99
40	\$	11,994.48	\$	3,433.76	\$	8,560.72	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,560.72
41	\$	12,039.46	\$	3,443.88	\$	8,595.58	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,595.58
42	\$	12,084.61	\$	3,454.04	\$	8,630.57	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,630.57
43	\$	12,129.93	\$	3,464.23	\$	8,665.69	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,665.69
44	\$	12,175.41	\$	3,474.47	\$	8,700.95	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,700.95
45	\$	12,221.07	\$	3,484.74	\$	8,736.33	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,736.33
46	\$	12,266.90	\$	3,495.05	\$	8,771.85	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,771.85
47	\$	12,312.90	\$	3,505.40	\$	8,807.50	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,807.50
48	\$	12,359.07	\$	3,515.79	\$	8,843.28	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,843.28
49	\$	12,405.42	\$	3,526.22	\$	8,879.20	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,879.20
50	\$	12,451.94	\$	3,536.69	\$	8,915.25	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,915.25
51	\$	12,498.64	\$	3,547.19	\$	8,951.44	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,951.44
52	\$	12,545.51	\$	3,557.74	\$	8,987.77	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	8,987.77
53	\$	12,592.55	\$	3,568.32	\$	9,024.23	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,024.23
54	\$	12,639.77	\$	3,578.95	\$	9,060.82	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,060.82
55	\$	12,687.17	\$	3,589.61	\$	9,097.56	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,097.56
56	\$	12,734.75	\$	3,600.32	\$	9,134.43	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,134.43
57	\$	12,782.50	\$	3,611.06	\$	9,171.44	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,171.44
58	\$	12,830.44	\$	3,621.85	\$	9,208.59	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,208.59
59	\$	12,878.55	\$	3,632.67	\$	9,245.88	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,245.88
60	\$	12,926.85	\$	3,643.54	\$	9,283.31	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,283.31
61	\$	12,975.32	\$	3,654.45	\$	9,320.88	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,320.88
62	\$	13,023.98	\$	3,665.40	\$	9,358.59	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,358.59
63	\$	13,072.82	\$	3,676.38	\$	9,396.44	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,396.44
64	\$	13,121.84	\$	3,687.41	\$	9,434.43	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,434.43
65	\$	13,171.05	\$	3,698.49	\$	9,472.56	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,472.56
66	\$	13,220.44	\$	3,709.60	\$	9,510.84	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,510.84
67	\$	13,270.02	\$	3,720.75	\$	9,549.26	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,549.26
68	\$	13,319.78	\$	3,731.95	\$	9,587.83	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,587.83
69	\$	13,369.73	\$	3,743.19	\$	9,626.54	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,626.54
70	\$	13,419.87	\$	3,754.47	\$	9,665.40	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,665.40
71	\$	13,470.19	\$	3,765.79	\$	9,704.40	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,704.40
72	\$	13,520.71	\$	3,777.16	\$	9,743.55	\$0.00	\$0.00	\$0.00	0	\$0.00	\$	9,743.55

CSA Delivery with Warehousing, Logistics, and Digital Ordering Cost, Revenue and Net

Present Value – The most likely case

Start Up Costs	
Website Development	\$ 15,000.00
Graphic Design and Logo Development	500.00
Cost of Refrigerated Truck	43,500.00
Logo Placement on Truck	450.00
Deposit on Warehouse Space	
TOTAL START UP COSTS	\$ 59,450.00

Monthly Operating Costs	
Website Hosting	\$ 85.00
Fuel for Delivery Truck	350.00
Auto Insurance	250.00
Online Marketing Costs	250.00
TOTAL MONTHLY OPERATING COSTS	\$ 935.00

Monthly Revenue Plan	Sales	% of Total Revenue
Delivery and Listing Fees	\$ 3,315.50	75%
Ad. Revenue for Local Ag Supply Businesses	221.03	5%
Tiered Business Admin Services for Vendors	884.13	20%
Total Monthly Revenue	\$ 4,420.67	100%

CSA Shares Served Monthly	Total Delivery Price Per Share	Delivery Revenue
600	\$ 3.49	\$ 2,093
950	\$ 3.49	\$ 3,316
1300	\$ 3.49	\$ 4,537

Net Present Value \$191,753.92

CSA Delivery with Digital Ordering Revenue and Cost Table

Period	Monthly Sales	Monthly Costs	Sales - Costs	Estimated Annual Sales Growth	Loan Payment	Principle Payment	Interst Payment	Additional Principle	Remaining Principle	Collumn N - Loan Payment
0				5%					\$ (59,450.00)	\$ (59,450.00)
1	\$ 4,420.67	\$ 935.00	\$ 3,485.67		\$1,856.10	\$1,472.15	\$383.95	0	(\$57,977.85)	\$ 1,629.57
2	\$ 4,438.17	\$ 936.36	\$ 3,501.80		\$1,856.10	\$1,481.66	\$374.44	0	(\$56,496.19)	\$ 1,645.70
3	\$ 4,455.73	\$ 937.73	\$ 3,518.00		\$1,856.10	\$1,491.23	\$364.87	0	(\$55,004.96)	\$ 1,661.91
4	\$ 4,473.37	\$ 939.10	\$ 3,534.27		\$1,856.10	\$1,500.86	\$355.24	0	(\$53,504.11)	\$ 1,678.18
5	\$ 4,491.08	\$ 940.47	\$ 3,550.61		\$1,856.10	\$1,510.55	\$345.55	0	(\$51,993.56)	\$ 1,694.51
6	\$ 4,508.85	\$ 941.84	\$ 3,567.02		\$1,856.10	\$1,520.31	\$335.79	0	(\$50,473.25)	\$ 1,710.92
7	\$ 4,526.70	\$ 943.21	\$ 3,583.49		\$1,856.10	\$1,530.13	\$325.97	0	(\$48,943.12)	\$ 1,727.39
8	\$ 4,544.62	\$ 944.59	\$ 3,600.03		\$1,856.10	\$1,540.01	\$316.09	0	(\$47,403.12)	\$ 1,743.94
9	\$ 4,562.61	\$ 945.96	\$ 3,616.65		\$1,856.10	\$1,549.95	\$306.15	0	(\$45,853.16)	\$ 1,760.55
10	\$ 4,580.67	\$ 947.34	\$ 3,633.33		\$1,856.10	\$1,559.96	\$296.14	0	(\$44,293.20)	\$ 1,777.23
11	\$ 4,598.80	\$ 948.73	\$ 3,650.08		\$1,856.10	\$1,570.04	\$286.06	0	(\$42,723.16)	\$ 1,793.98
12	\$ 4,617.01	\$ 950.11	\$ 3,666.90		\$1,856.10	\$1,580.18	\$275.92	0	(\$41,142.99)	\$ 1,810.80
13	\$ 4,635.28	\$ 951.49	\$ 3,683.79		\$1,856.10	\$1,590.38	\$265.72	0	(\$39,552.60)	\$ 1,827.69
14	\$ 4,653.63	\$ 952.88	\$ 3,700.75		\$1,856.10	\$1,600.65	\$255.44	0	(\$37,951.95)	\$ 1,844.65
15	\$ 4,672.05	\$ 954.27	\$ 3,717.78		\$1,856.10	\$1,610.99	\$245.11	0	(\$36,340.96)	\$ 1,861.68
16	\$ 4,690.54	\$ 955.66	\$ 3,734.88		\$1,856.10	\$1,621.40	\$234.70	0	(\$34,719.56)	\$ 1,878.78
17	\$ 4,709.11	\$ 957.06	\$ 3,752.05		\$1,856.10	\$1,631.87	\$224.23	0	(\$33,087.69)	\$ 1,895.95
18	\$ 4,727.75	\$ 958.45	\$ 3,769.30		\$1,856.10	\$1,642.41	\$213.69	0	(\$31,445.29)	\$ 1,913.20
19	\$ 4,746.46	\$ 959.85	\$ 3,786.61		\$1,856.10	\$1,653.01	\$203.08	0	(\$29,792.27)	\$ 1,930.52
20	\$ 4,765.25	\$ 961.25	\$ 3,804.00		\$1,856.10	\$1,663.69	\$192.41	0	(\$28,128.58)	\$ 1,947.90
21	\$ 4,784.11	\$ 962.65	\$ 3,821.46		\$1,856.10	\$1,674.43	\$181.66	0	(\$26,454.15)	\$ 1,965.36
22	\$ 4,803.05	\$ 964.06	\$ 3,839.00		\$1,856.10	\$1,685.25	\$170.85	0	(\$24,768.90)	\$ 1,982.90
23	\$ 4,822.06	\$ 965.46	\$ 3,856.60		\$1,856.10	\$1,696.13	\$159.97	0	(\$23,072.77)	\$ 2,000.50
24	\$ 4,841.15	\$ 966.87	\$ 3,874.28		\$1,856.10	\$1,707.09	\$149.01	0	(\$21,365.68)	\$ 2,018.18
25	\$ 4,860.31	\$ 968.28	\$ 3,892.03		\$1,856.10	\$1,718.11	\$137.99	0	(\$19,647.57)	\$ 2,035.94
26	\$ 4,879.55	\$ 969.69	\$ 3,909.86		\$1,856.10	\$1,729.21	\$126.89	0	(\$17,918.36)	\$ 2,053.76
27	\$ 4,898.87	\$ 971.11	\$ 3,927.76		\$1,856.10	\$1,740.38	\$115.72	0	(\$16,177.99)	\$ 2,071.66
28	\$ 4,918.26	\$ 972.52	\$ 3,945.74		\$1,856.10	\$1,751.62	\$104.48	0	(\$14,426.37)	\$ 2,089.64
29	\$ 4,937.73	\$ 973.94	\$ 3,963.79		\$1,856.10	\$1,762.93	\$93.17	0	(\$12,663.44)	\$ 2,107.69
30	\$ 4,957.27	\$ 975.36	\$ 3,981.91		\$1,856.10	\$1,774.31	\$81.78	0	(\$10,889.13)	\$ 2,125.81
31	\$ 4,976.89	\$ 976.78	\$ 4,000.11		\$1,856.10	\$1,785.77	\$70.33	0	(\$9,103.36)	\$ 2,144.01
32	\$ 4,996.59	\$ 978.21	\$ 4,018.39		\$1,856.10	\$1,797.31	\$58.79	0	(\$7,306.05)	\$ 2,162.29
33	\$ 5,016.37	\$ 979.63	\$ 4,036.74		\$1,856.10	\$1,808.91	\$47.18	0	(\$5,497.14)	\$ 2,180.64
34	\$ 5,036.23	\$ 981.06	\$ 4,055.17		\$1,856.10	\$1,820.60	\$35.50	0	(\$3,676.54)	\$ 2,199.07
35	\$ 5,056.16	\$ 982.49	\$ 4,073.67		\$1,856.10	\$1,832.35	\$23.74	0	(\$1,844.19)	\$ 2,217.57
36	\$ 5,076.18	\$ 983.93	\$ 4,092.25		\$1,856.10	\$1,844.19	\$11.91	0	\$0.00	\$ 2,236.15

CSA Delivery with Digital Ordering Revenue and Cost Table - Continued

37	\$	5,096.27	\$	985.36	\$	4,110.91		\$0.00		0	\$0.00	\$	4,110.91
38	\$	5,116.44	\$	986.80	\$	4,129.65		\$0.00		0	\$0.00	\$	4,129.65
39	\$	5,136.70	\$	988.24	\$	4,148.46		\$0.00		0	\$0.00	\$	4,148.46
40	\$	5,157.03	\$	989.68	\$	4,167.35		\$0.00		0	\$0.00	\$	4,167.35
41	\$	5,177.44	\$	991.12	\$	4,186.32		\$0.00		0	\$0.00	\$	4,186.32
42	\$	5,197.94	\$	992.57	\$	4,205.37		\$0.00		0	\$0.00	\$	4,205.37
43	\$	5,218.51	\$	994.01	\$	4,224.50		\$0.00		0	\$0.00	\$	4,224.50
44	\$	5,239.17	\$	995.46	\$	4,243.70		\$0.00		0	\$0.00	\$	4,243.70
45	\$	5,259.91	\$	996.92	\$	4,262.99		\$0.00		0	\$0.00	\$	4,262.99
46	\$	5,280.73	\$	998.37	\$	4,282.36		\$0.00		0	\$0.00	\$	4,282.36
47	\$	5,301.63	\$	999.83	\$	4,301.80		\$0.00		0	\$0.00	\$	4,301.80
48	\$	5,322.62	\$	1,001.28	\$	4,321.33		\$0.00		0	\$0.00	\$	4,321.33
49	\$	5,343.68	\$	1,002.74	\$	4,340.94		\$0.00		0	\$0.00	\$	4,340.94
50	\$	5,364.84	\$	1,004.21	\$	4,360.63		\$0.00		0	\$0.00	\$	4,360.63
51	\$	5,386.07	\$	1,005.67	\$	4,380.40		\$0.00		0	\$0.00	\$	4,380.40
52	\$	5,407.39	\$	1,007.14	\$	4,400.26		\$0.00		0	\$0.00	\$	4,400.26
53	\$	5,428.80	\$	1,008.61	\$	4,420.19		\$0.00		0	\$0.00	\$	4,420.19
54	\$	5,450.29	\$	1,010.08	\$	4,440.21		\$0.00		0	\$0.00	\$	4,440.21
55	\$	5,471.86	\$	1,011.55	\$	4,460.31		\$0.00		0	\$0.00	\$	4,460.31
56	\$	5,493.52	\$	1,013.03	\$	4,480.49		\$0.00		0	\$0.00	\$	4,480.49
57	\$	5,515.26	\$	1,014.50	\$	4,500.76		\$0.00		0	\$0.00	\$	4,500.76
58	\$	5,537.10	\$	1,015.98	\$	4,521.11		\$0.00		0	\$0.00	\$	4,521.11
59	\$	5,559.01	\$	1,017.46	\$	4,541.55		\$0.00		0	\$0.00	\$	4,541.55
60	\$	5,581.02	\$	1,018.95	\$	4,562.07		\$0.00		0	\$0.00	\$	4,562.07
61	\$	5,603.11	\$	1,020.43	\$	4,582.68		\$0.00		0	\$0.00	\$	4,582.68
62	\$	5,625.29	\$	1,021.92	\$	4,603.37		\$0.00		0	\$0.00	\$	4,603.37
63	\$	5,647.56	\$	1,023.41	\$	4,624.14		\$0.00		0	\$0.00	\$	4,624.14
64	\$	5,669.91	\$	1,024.90	\$	4,645.01		\$0.00		0	\$0.00	\$	4,645.01
65	\$	5,692.35	\$	1,026.40	\$	4,665.95		\$0.00		0	\$0.00	\$	4,665.95
66	\$	5,714.89	\$	1,027.90	\$	4,686.99		\$0.00		0	\$0.00	\$	4,686.99
67	\$	5,737.51	\$	1,029.39	\$	4,708.11		\$0.00		0	\$0.00	\$	4,708.11
68	\$	5,760.22	\$	1,030.90	\$	4,729.32		\$0.00		0	\$0.00	\$	4,729.32
69	\$	5,783.02	\$	1,032.40	\$	4,750.62		\$0.00		0	\$0.00	\$	4,750.62
70	\$	5,805.91	\$	1,033.91	\$	4,772.01		\$0.00		0	\$0.00	\$	4,772.01
71	\$	5,828.89	\$	1,035.41	\$	4,793.48		\$0.00		0	\$0.00	\$	4,793.48
72	\$	5,851.96	\$	1,036.92	\$	4,815.04		\$0.00		0	\$0.00	\$	4,815.04

Non-Profit Community Garden Farm Cost, Revenue and Net Present Value – The most

Start Up Costs		
5.11 Acres in Maple Valley	\$	185,000
Water Retention System	\$	1,200
Land Preparation and Plot Creation	\$	600
Delivery Truck to send product to food bank	\$	34,500
Fencing	\$	2,500
Green House Construction (3)	\$	1,647
TOTAL START UP COSTS	\$	225,447.00

likely case

Monthly Operating Costs		
Volunteer Grounds Keeping	\$	-
Land Upkeep Costs	\$	50.00
TOTAL MONTHLY OPERATING COSTS	\$	50.00

Business Loan Rate 8%

Square Feet per Acre	43,560
Areable Acres in Community Garden	4
Total Arable Square Feet	174,240
Square Feet per Garden Plot Needed	936
Total Plots Available	186
Annual Garden Fee	\$40
Total Garden Plot Revenue	\$7,440
Monthly Garden Plot Revenue	\$620.00

Monthly Revenue Plan	Sales	% of Total Revenue
City and Community Donations	\$ 4,972.99	60%
Plot Rent Sales	\$ 620.00	8%
Monthly Grant Funding	\$ 2,130.41	26%
Tiered Service Packages	\$ 525.32	6%
Total Monthly Revenue	\$ 8,248.72	100.00%

Net Present Value \$340,606.47

Non-Profit Community Garden Revenue and Cost Table

Period	Monthly Sales	Monthly Costs	Sales - Costs	Estimated Annual Sales Growth	Loan Payment	Principle Payment	Interst Payment	Additional Principle	Remaining Principle	Collumn N - Loan Payment
0				5%					\$ (59,450.00)	\$ (59,450.00)
1	\$ 4,421.33	\$ 935.00	\$ 3,486.33		\$1,856.10	\$1,472.15	\$383.95	0	(\$57,977.85)	\$ 1,630.24
2	\$ 4,438.83	\$ 936.36	\$ 3,502.47		\$1,856.10	\$1,481.66	\$374.44	0	(\$56,496.19)	\$ 1,646.37
3	\$ 4,456.40	\$ 937.73	\$ 3,518.68		\$1,856.10	\$1,491.23	\$364.87	0	(\$55,004.96)	\$ 1,662.58
4	\$ 4,474.04	\$ 939.10	\$ 3,534.95		\$1,856.10	\$1,500.86	\$355.24	0	(\$53,504.11)	\$ 1,678.85
5	\$ 4,491.75	\$ 940.47	\$ 3,551.29		\$1,856.10	\$1,510.55	\$345.55	0	(\$51,993.56)	\$ 1,695.19
6	\$ 4,509.53	\$ 941.84	\$ 3,567.70		\$1,856.10	\$1,520.31	\$335.79	0	(\$50,473.25)	\$ 1,711.60
7	\$ 4,527.38	\$ 943.21	\$ 3,584.17		\$1,856.10	\$1,530.13	\$325.97	0	(\$48,943.12)	\$ 1,728.08
8	\$ 4,545.31	\$ 944.59	\$ 3,600.72		\$1,856.10	\$1,540.01	\$316.09	0	(\$47,403.12)	\$ 1,744.62
9	\$ 4,563.30	\$ 945.96	\$ 3,617.33		\$1,856.10	\$1,549.95	\$306.15	0	(\$45,853.16)	\$ 1,761.24
10	\$ 4,581.36	\$ 947.34	\$ 3,634.02		\$1,856.10	\$1,559.96	\$296.14	0	(\$44,293.20)	\$ 1,777.92
11	\$ 4,599.49	\$ 948.73	\$ 3,650.77		\$1,856.10	\$1,570.04	\$286.06	0	(\$42,723.16)	\$ 1,794.67
12	\$ 4,617.70	\$ 950.11	\$ 3,667.59		\$1,856.10	\$1,580.18	\$275.92	0	(\$41,142.99)	\$ 1,811.49
13	\$ 4,635.98	\$ 951.49	\$ 3,684.49		\$1,856.10	\$1,590.38	\$265.72	0	(\$39,552.60)	\$ 1,828.39
14	\$ 4,654.33	\$ 952.88	\$ 3,701.45		\$1,856.10	\$1,600.65	\$255.44	0	(\$37,951.95)	\$ 1,845.35
15	\$ 4,672.75	\$ 954.27	\$ 3,718.48		\$1,856.10	\$1,610.99	\$245.11	0	(\$36,340.96)	\$ 1,862.38
16	\$ 4,691.25	\$ 955.66	\$ 3,735.59		\$1,856.10	\$1,621.40	\$234.70	0	(\$34,719.56)	\$ 1,879.49
17	\$ 4,709.82	\$ 957.06	\$ 3,752.76		\$1,856.10	\$1,631.87	\$224.23	0	(\$33,087.69)	\$ 1,896.66
18	\$ 4,728.46	\$ 958.45	\$ 3,770.01		\$1,856.10	\$1,642.41	\$213.69	0	(\$31,445.29)	\$ 1,913.91
19	\$ 4,747.18	\$ 959.85	\$ 3,787.33		\$1,856.10	\$1,653.01	\$203.08	0	(\$29,792.27)	\$ 1,931.23
20	\$ 4,765.97	\$ 961.25	\$ 3,804.72		\$1,856.10	\$1,663.69	\$192.41	0	(\$28,128.58)	\$ 1,948.62
21	\$ 4,784.84	\$ 962.65	\$ 3,822.18		\$1,856.10	\$1,674.43	\$181.66	0	(\$26,454.15)	\$ 1,966.09
22	\$ 4,803.78	\$ 964.06	\$ 3,839.72		\$1,856.10	\$1,685.25	\$170.85	0	(\$24,768.90)	\$ 1,983.62
23	\$ 4,822.79	\$ 965.46	\$ 3,857.33		\$1,856.10	\$1,696.13	\$159.97	0	(\$23,072.77)	\$ 2,001.23
24	\$ 4,841.88	\$ 966.87	\$ 3,875.01		\$1,856.10	\$1,707.09	\$149.01	0	(\$21,365.68)	\$ 2,018.91
25	\$ 4,861.05	\$ 968.28	\$ 3,892.77		\$1,856.10	\$1,718.11	\$137.99	0	(\$19,647.57)	\$ 2,036.67
26	\$ 4,880.29	\$ 969.69	\$ 3,910.60		\$1,856.10	\$1,729.21	\$126.89	0	(\$17,918.36)	\$ 2,054.50
27	\$ 4,899.61	\$ 971.11	\$ 3,928.50		\$1,856.10	\$1,740.38	\$115.72	0	(\$16,177.99)	\$ 2,072.40
28	\$ 4,919.00	\$ 972.52	\$ 3,946.48		\$1,856.10	\$1,751.62	\$104.48	0	(\$14,426.37)	\$ 2,090.38
29	\$ 4,938.47	\$ 973.94	\$ 3,964.53		\$1,856.10	\$1,762.93	\$93.17	0	(\$12,663.44)	\$ 2,108.43
30	\$ 4,958.02	\$ 975.36	\$ 3,982.66		\$1,856.10	\$1,774.31	\$81.78	0	(\$10,889.13)	\$ 2,126.56
31	\$ 4,977.65	\$ 976.78	\$ 4,000.86		\$1,856.10	\$1,785.77	\$70.33	0	(\$9,103.36)	\$ 2,144.76
32	\$ 4,997.35	\$ 978.21	\$ 4,019.14		\$1,856.10	\$1,797.31	\$58.79	0	(\$7,306.05)	\$ 2,163.04
33	\$ 5,017.13	\$ 979.63	\$ 4,037.50		\$1,856.10	\$1,808.91	\$47.18	0	(\$5,497.14)	\$ 2,181.40
34	\$ 5,036.99	\$ 981.06	\$ 4,055.93		\$1,856.10	\$1,820.60	\$35.50	0	(\$3,676.54)	\$ 2,199.83
35	\$ 5,056.93	\$ 982.49	\$ 4,074.43		\$1,856.10	\$1,832.35	\$23.74	0	(\$1,844.19)	\$ 2,218.34
36	\$ 5,076.94	\$ 983.93	\$ 4,093.02		\$1,856.10	\$1,844.19	\$11.91	0	\$0.00	\$ 2,236.92

Non-Profit Community Garden Revenue and Cost Table – Continued

37	\$	5,097.04	\$	985.36	\$	4,111.68	\$0.00	0	\$0.00	\$	4,111.68
38	\$	5,117.22	\$	986.80	\$	4,130.42	\$0.00	0	\$0.00	\$	4,130.42
39	\$	5,137.47	\$	988.24	\$	4,149.23	\$0.00	0	\$0.00	\$	4,149.23
40	\$	5,157.81	\$	989.68	\$	4,168.13	\$0.00	0	\$0.00	\$	4,168.13
41	\$	5,178.22	\$	991.12	\$	4,187.10	\$0.00	0	\$0.00	\$	4,187.10
42	\$	5,198.72	\$	992.57	\$	4,206.15	\$0.00	0	\$0.00	\$	4,206.15
43	\$	5,219.30	\$	994.01	\$	4,225.28	\$0.00	0	\$0.00	\$	4,225.28
44	\$	5,239.96	\$	995.46	\$	4,244.49	\$0.00	0	\$0.00	\$	4,244.49
45	\$	5,260.70	\$	996.92	\$	4,263.78	\$0.00	0	\$0.00	\$	4,263.78
46	\$	5,281.52	\$	998.37	\$	4,283.15	\$0.00	0	\$0.00	\$	4,283.15
47	\$	5,302.43	\$	999.83	\$	4,302.60	\$0.00	0	\$0.00	\$	4,302.60
48	\$	5,323.42	\$	1,001.28	\$	4,322.14	\$0.00	0	\$0.00	\$	4,322.14
49	\$	5,344.49	\$	1,002.74	\$	4,341.75	\$0.00	0	\$0.00	\$	4,341.75
50	\$	5,365.65	\$	1,004.21	\$	4,361.44	\$0.00	0	\$0.00	\$	4,361.44
51	\$	5,386.89	\$	1,005.67	\$	4,381.21	\$0.00	0	\$0.00	\$	4,381.21
52	\$	5,408.21	\$	1,007.14	\$	4,401.07	\$0.00	0	\$0.00	\$	4,401.07
53	\$	5,429.62	\$	1,008.61	\$	4,421.01	\$0.00	0	\$0.00	\$	4,421.01
54	\$	5,451.11	\$	1,010.08	\$	4,441.03	\$0.00	0	\$0.00	\$	4,441.03
55	\$	5,472.69	\$	1,011.55	\$	4,461.14	\$0.00	0	\$0.00	\$	4,461.14
56	\$	5,494.35	\$	1,013.03	\$	4,481.32	\$0.00	0	\$0.00	\$	4,481.32
57	\$	5,516.10	\$	1,014.50	\$	4,501.59	\$0.00	0	\$0.00	\$	4,501.59
58	\$	5,537.93	\$	1,015.98	\$	4,521.95	\$0.00	0	\$0.00	\$	4,521.95
59	\$	5,559.85	\$	1,017.46	\$	4,542.39	\$0.00	0	\$0.00	\$	4,542.39
60	\$	5,581.86	\$	1,018.95	\$	4,562.91	\$0.00	0	\$0.00	\$	4,562.91
61	\$	5,603.95	\$	1,020.43	\$	4,583.52	\$0.00	0	\$0.00	\$	4,583.52
62	\$	5,626.14	\$	1,021.92	\$	4,604.22	\$0.00	0	\$0.00	\$	4,604.22
63	\$	5,648.41	\$	1,023.41	\$	4,624.99	\$0.00	0	\$0.00	\$	4,624.99
64	\$	5,670.77	\$	1,024.90	\$	4,645.86	\$0.00	0	\$0.00	\$	4,645.86
65	\$	5,693.21	\$	1,026.40	\$	4,666.81	\$0.00	0	\$0.00	\$	4,666.81
66	\$	5,715.75	\$	1,027.90	\$	4,687.85	\$0.00	0	\$0.00	\$	4,687.85
67	\$	5,738.37	\$	1,029.39	\$	4,708.98	\$0.00	0	\$0.00	\$	4,708.98
68	\$	5,761.09	\$	1,030.90	\$	4,730.19	\$0.00	0	\$0.00	\$	4,730.19
69	\$	5,783.89	\$	1,032.40	\$	4,751.49	\$0.00	0	\$0.00	\$	4,751.49
70	\$	5,806.79	\$	1,033.91	\$	4,772.88	\$0.00	0	\$0.00	\$	4,772.88
71	\$	5,829.77	\$	1,035.41	\$	4,794.36	\$0.00	0	\$0.00	\$	4,794.36
72	\$	5,852.85	\$	1,036.92	\$	4,815.92	\$0.00	0	\$0.00	\$	4,815.92