SHARING FIXED COSTS IN A SINGLE ESTABLISHMENT:

COMBINING A BREWPUB AND COFFEE HOUSE

A Project Presented to the Faculty
of
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of Master of Business Administration

By
Bridgette Berry
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CERTIFICATION OF APPROVAL

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DEDICATION

This project is dedicated to the closest people in my life who always push me to the limits of greatest achievement, my wife and mom. Life is hard enough; you make it easy for me to dream the biggest dreams.

I also would like to dedicate this paper to the many entrepreneurs with thousands of great ideas; know it only takes one idea to follow through and you can achieve success.

ACKNOWLEDGEMENTS

I am very thankful to my mentor, Dr. Peter Xu for his encouragement and positive influence as I completed this important research. His patience and guidance helped me to stay focused and polish my thoughts. I would like to thank the faculty, staff, and my fellow scholars at the California State University, Stanislaus who have been positive driving forces from beginning to end throughout this venture.

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ABSTRACT

As many small business in the United States fail annually, there is additional pressure to stay creative, and strategy is imperative to success. The purpose of this study is to model a potential strategy by combining two business models, a brewpub and coffee roasting house, in the same establishment to determine if sharing fixed costs helps drive total cost down. Customers are looking for more natural, high quality ingredients in their coffee and beer, hence the rise in the craft markets. Equipment costs, labor, ingredient costs, and processing times create high prices for these products, making it difficult for small business owners to succeed. In the center of California's agricultural mecca, the Central Valley, this project explores this combined business model to determine what factors, including location, capacity, and cost, play an important role in strategy. The main data sources include analysis of ingredient location, estimated startup costs, SWOT analysis, census data, and operation costs. Based on analysis of data, three main conclusions emerged: The importance of convenient location and size of establishment in keeping fixed costs low, understanding increasing incremental costs for each unit sold, and a need for strategy around expansion and continually sourcing fresh ingredients. Potential implications for analysis of capacity for the establishment and room for expansion include increasing the rate of success and developing a shared fixed cost model for similar businesses.

INTRODUCTION

Foundation

Virtually all restaurants and cafes face the challenge of bringing a maximum amount of customers in during peak hours to maximize profits. One strategy to maximize profits includes offsetting fixed costs by increasing variable costs to cover all potential time period gaps. Consider this scenario: a coffee shop and a brewpub exist in the same shopping area. The coffee shop opens its doors early in the morning and stays open for lunch selling delicious morning pastries and afternoon sandwiches and closing by 2:00 P.M. The brewpub opens its doors around 11:00 A.M., just in time for lunch, and stays open until 11:00 P.M., catching all the college kids and sports fans in the area. Each one of those business owners has high profiting sales, and their fix costs remain the same regardless of their business hours. This project considers the benefits sharing fix costs by combining both businesses into one establishment.

Background to the Problem

In order to evaluate sharing fixed costs as a model, this study will focus on two industries aforementioned in the example, the craft brewing and coffee industries. As opposite as the two industries may seem, they are both increasingly popular and are beginning to converge. Many ingredient suppliers are noticing a growing interest in coffee flavors and extracts in the craft beer markets (Storelli, 2015). While both industries are profiting from each other, each industry poses its own challenges

within, including costly equipment, ingredients, and startup materials (Gits, 2004; Kleban & Nickerson, 2011). Coffee house roasting is becoming more and more popular and coffee houses and breweries are partnering to create the craft front.

With a large failure rate for small businesses, and the complexity of creating craft products, the need to explore strategy around sharing a business venue is important to these two industries, and appropriately, this study. According to the Small Business Association in 2014, approximately 50% of small business startups fail within five years, and 33% fail within the first two years (U.S. Small Business Administration, [SBA], 2014). These failures do not seem tied to overall economy activity. Better understanding of possible business strategies in the small business realm may help entrepreneurs develop new ways of launching businesses by combining cost, particularly fixed costs. The results of this study may benefit entrepreneurs who want to consider opening a business in the craft category along with mixing products to maximize profits while keeping fixed costs low.

Whether the business is open or closed and whether or not production is running, fixed costs must be paid. Business hours are usually determined based on customer interest of the product. Fixed costs for one unit produced may be overall higher compared to total fixed costs of ten units produced (Makeham & Malcolm, 1986). Therefore, the combination business should see its average fixed costs lower due to more units sold in the same amount of space. Using this logic, this study will look at the specifics of interpreting fixed costs and defining what other costs and factors may play a role in craft entrepreneurship**.**

Motivation

The motivation for this investigation of sharing fixed costs stems from listening to podcasts and reading articles around starting up a microbrewery. Although the brewing industry can lead to great success, there is a need for creativity because of a high number of competitors and high capital needs. In order to reduce total costs over time, the idea of paying fixed costs in an establishment while selling products like beer and coffee both during the morning and night seemed worthy of investigation.

Problem Statement and Objectives

Developing a profitable business strategy is complex, but developing it while combining two separate operation processes requires additional research. The impetus for this project asks the following business problem: is it feasible to open a brewpub and roasting coffee house in the same establishment?

Other key questions that are investigated include:

- Is Modesto, California a good location for a brewpub/coffee house?
- How large should a brewpub and coffee house be in order to be successful?
- How much capital is needed to start a successful brewpub and coffee house?
- How can a small business strategize when combining two separate products and selling them simultaneously?

Contribution

Creating a business plan for a small business startup can quickly become an information pile of financials, market projections, and other related data. For small business owners and startup entrepreneurs, hopefully, this study can help provide a guide to strategize and design a plan to become profitable and determine road blocks ahead of time. This study is unique in that it uses specifics like location and costs of specific equipment, to create realistic information that can translate to feasibility. Research success would be to prove it is feasible to successfully sell two products, which complement each other but have their own unique industries, in one establishment.

LITERATURE REVIEW

The information in the literature review includes a detailed examination of the craft beer industry, craft coffee industry, co-branding in small businesses, analysis of fixed costs, and a feasibility analysis. The literature review will present an evidence-based analysis for the problem statement with a case to argue and review the information known about the subject areas (Machi & McEvoy, 2016). Information from dissertations, journal articles, industry records, publications, and books are included to help support the business problem statement.

Craft Beer Industry

In the beer brewing industry, the top three breweries produce 88% of the market share, and the smaller craft breweries produce 22% (Brewers Association, 2016). Craft breweries are defined as small and independent brewing operations with unique, non-traditional ingredients and small scale production (Kleban & Nickerson, 2011). Although the craft industry is smaller in product share, in the last few decades, the craft brewing industry has begun to change the way consumers drink beer. New entrants into the micro brewing market are becoming more and more creative in the brewing industry—including new ingredients, different types of atmosphere, and connecting to the local population through events and tastings.

As for 2016, the growth has remained steady with a 12.3% increase (see Figure 1) in volume share for craft breweries (Brewers Association, 2016). Microbreweries with high quality beer and sound business models are beginning to

lose out because of heavy competition. According to Bob Weinberg, a statistician of R.S. Weinberg & Associates in St. Louis, microbrewers below one million barrels produced per year do not pose any type of threat to the three largest breweries in the U.S., and the demand for specialty beers is growing so fast, they are impacting each other ("Craft brews," 1997). Consumers are drinking differently, and brewers need to differentiate while creating high-quality beers (Shen, 2015). The brew master at Dogfish Head Brewery, the nation's fastest growing microbrewery, notes his key to success has been practicing economies of scope and educating consumers with the complexity and sophistication of beer (Calagione, 2011).

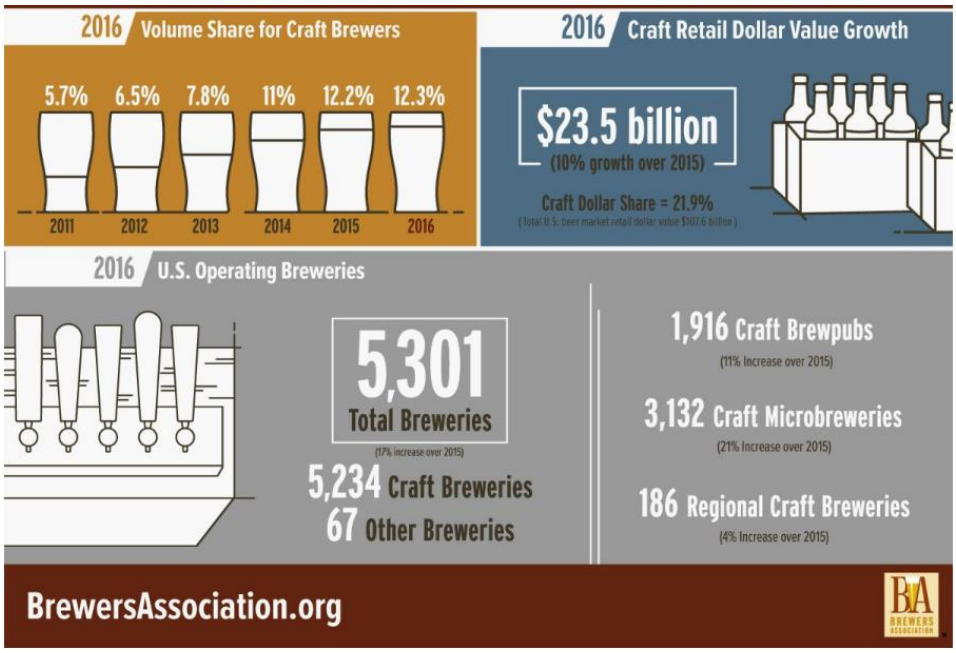

Figure 1. 2016 Craft Brewery Statistics. Baker, J. (2017, March 28). Craft brewing growth statistics for 2016. *Craftbeer.com.* Retrieved from https://www.craftbeer.com/editors-picks/craft-brewing-growth-statistics-2016-ba-report

The economic impact of the U.S. alcohol industry continues to grow stronger as it has historically. In 2014, the U.S. beverage alcohol industry comprised of $475 billion in economy activity and $25 billion of that went directly to state and local revenues (Distilled Spirits, 2014). While the alcohol industry consists of different categories including wine, beer, and spirits, the largest growth in the past ten years has been in the beer industry, particularly craft beer. According to *San Diego Business Journal*, California is the largest U.S. state for craft beer production with $600 million in economic activity and providing 6,200 jobs (Hirsh, 2016). Looking at the craft beer trend in the last ten years, at some point the industry should begin to plateau and possibly decrease in the number of microbreweries (below in Figure 2). The response to this potential downturn is to become creative and find craft beer drinkers who want unique ingredients.

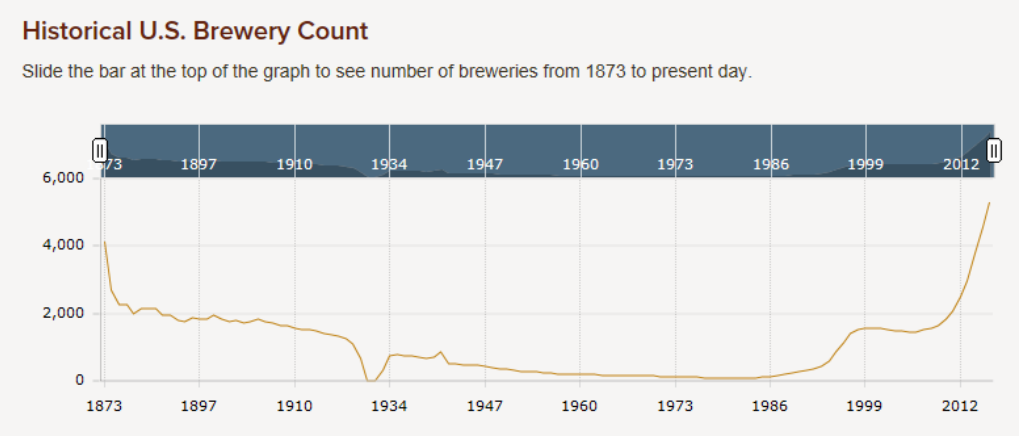

Figure 2: Graph showing historical trend of breweries from 1873 – 2016 in the United States. Number of Breweries. (n.d.) *Brewers Association for Small and Independent Craft Brewers*. Retrieved from https://www.brewersassociation.org/statistics/number-of-breweries/

Some of the most popular, nontraditional ingredients in craft beer are extracts and essences from coffee. Brewers are applying flavor science and food pairings to determine how coffee ingredients can combine with beer (Storelli, 2015). One challenge posed to the brewing industry, particularly the craft brewing segment, is the highly competitive market and saturated response to demand. In order to offer a range of products, microbreweries are pairing beer with food such as pastries and sweet desserts in order to offer customers new flavors (Chow, 2010).

This study focuses on the brewpub, which is a market segment of the industry incorporating a brewery and restaurant. According to the governing United States Alcohol and Tobacco Tax and Trade Bureau, a brewpub is defined as selling 25% or more of its beer on site. In Figure 3, (Satran, 2014) breaks down the cost of craft beer in a 6-pack package. The ingredients, he estimates, comprise of about 10% of the cost, packaging and shipping contributes 19%, and the distributor's and retailer's portion is about 52%. With a brewpub, the idea is to bring the customer in to enjoy the product there on tap. This cuts out 71% of the below mentioned costs, creating high margins and availability to sell product quicker with less handling.

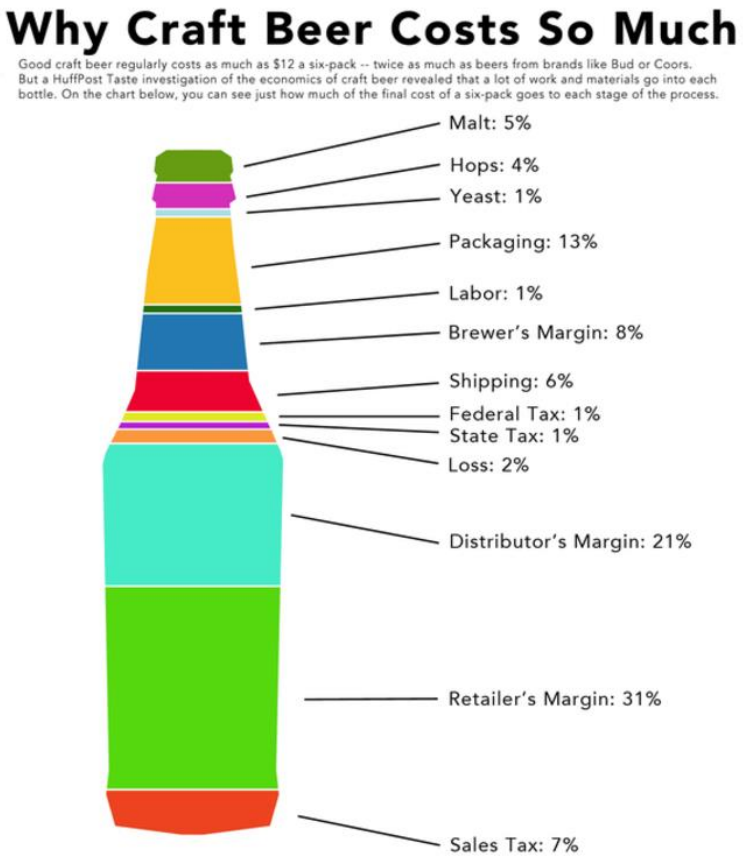

Figure 3: Percentage of costs of a craft beer. Satran, J. (2014, Sep. 14). Here's how a six-pack of craft beer ends up costing $12. *Huffington Post*. Retrieved at *http://www.huffingtonpost.com/2014/09/12/craft-beer-expensive-cost_n_5670015.html*

California

The location of the proposed brewery is relevant because California is known for starting the craft beer movement in 1965 with Fritz Maytag of Anchor Brewing Company in San Francisco, California ("History of Craft Beer," 2017). With several craft breweries still open today and some of the largest in the United States, California is still known as the epicenter for craft brewing. In recent years, Sacramento has begun to accrue more and more hop farms, one of the most perishable and difficult ingredient in beer making. Many beers are made with dry

hops or hop pellets, but recently, fresh hops are being distributed on a larger scale to California craft breweries (Kaufman, 2014). Larger channels of fresh ingredients allows for fresher and higher quality beer.

Craft Coffee Industry

In the United States, the annual revenue from the coffee business is about $12 billion where the top 20 companies generate 70% of sales or $8.4 billion, similar to the percentages of the beer industry (Coffee Shop Business, 2016). The market is competitive only to the top 20 companies, which continue to create innovative products. Many small coffee shops rely on consumers to have disposable income, and in order to make profit, they combine innovative menu items to pair with coffee (Coffee Shop Business, 2016). Many specialty coffee drinkers are popular and usually contribute to higher profit per sale (cappuccinos, lattes, Macchiato, etc.).

For the craft coffee making industry, the industry rests on a precarious definition of what a craft coffee drink really is. The Specialty Coffee Association of America, or SCAA, is a group of coffee professionals defining quality standards and discussing issues amongst mostly supply chain challenges (“History,” 2009). While the definition is vague, the SCAA does state that specialty coffee shops derive 55% of total volume of sale in coffee, coffee beverages, and coffee accessories (see Figure 4).

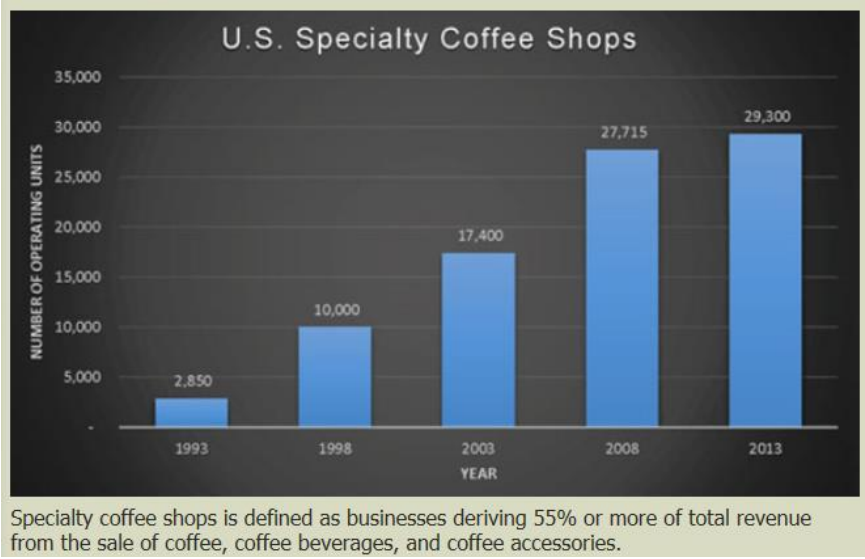

Figure 4: Specialty coffee shops trend. History. (2009). *Specialty Coffee Association of America*. Retrieved July 30, 2017, from http://www.scaa.org/?page=history

Consumers continue to question mass-produced food ingredients and often side with eating craft foods driven by increased health concerns in packaged foods (Chao, 2017). While sales increase in the craft segments, so does creativity. According to Forbes magazine, the top three reasons for failure of a small business are, not being in touch with customers, not differentiating in the market, and failure to communicate value (Wagner, 2013). Craft products all have the stamp of fresh and high quality ingredients, but setting them apart is where business strategy can play a role. Other industries such as cheese and chocolate are joining in with the craft movement, but ultimately, coffee and beer are paving the craft way.

Combined Business Model

The scope of the brewpub/coffeehouse business model is to be creative by combining products from the two industries and partnering with the community. The goals of this project is to combine the positive marketing trends in coffee and beer

along with the creativity that both industries bring to the craft market. This creativity includes new products that are a combination of each other. New trends have hit the market including products like cold brew coffee, which some small cafes are serving on tap with nitrogen to create a smooth creamy stout-like effect which can attract beer drinkers (Krasny, 2017). On the flip side, many breweries are partnering with coffee roast houses to make coffee beers, which incorporate local ingredients and bring communities together (Fry, 2016). Focusing in the craft segment with high quality home made products along with partnering with the community is the larger aim of this project and business venture.

Co-Branding

In business marketing terms, the term "co-branding," has many different meanings, but is mainly defined as two or more companies forming an alliance to sell multiple products or combine products. Vertical co-branding includes NutraSweet joining Coca-Cola; horizontal co-branding includes Nike and Apple which launched the "Nike Plus sport shoe" (Zickermann, 2014). In the early 2000s, co-branding was popular in the franchise food service as Carl's Jr. and Green Burrito partnered up and McDonald's became available in Wal-Mart stores. McDonald's executives found they had limited exposure. Other companies commented on ensuring availability of resources and working through many marketing and managerial issues (Young, Green & Paswan, 2000). Co-branding is viewed in the marketing sector as having few accounts of success, but if both products can increase sales, the increase is exponential.

Co-branding in small businesses works best when each company provides a related service or product with the same types of customers. In the online small business industry, this strategy works well to bring more customers by clicking on similar links to take them to a different site where other products are available for purchase (Ortega, 2014). The same concept applies with shared costs on a website, both companies sharing the domain, can equally share the costs of marketing their sites, along with having access to a larger customer base. One potential danger in co-branding is the possibility of product contagion, or customers being disgusted by the physical contact of two products. Some consumers may believe that products can transfer offensive properties through physical contact as they come in contact with other products (Morales & Fitzsimons, 2007).

Fixed Costs Evaluation

Total costs associated to a business come in two forms, fixed costs, which do not change depending on number of units sold, and variable costs, which change depending on the amount of units are sold. Producing more units lowers the total fixed costs; therefore, the average fixed costs fall as the quantity of output increases (Makeham & Malcolm, 1986). Thus, spreading the costs throughout the size of the facility and production costs will ultimately lower costs overall. For a small business, the rent or mortgage, a fixed cost, remains the same monthly whether more units are sold or if the hours of operation are extended.

Another industry which is always trying to determine how to charge customers based on fixed and variable cost is the health industry, more specifically

hospitals. In hospitals, in order to achieve economies of scope, services such as radiology, surgery, emergency, and sometimes pharmacies allow the customer all services in one location (Penner, 2013). By continuing to produce more units in one facility, even though average variable costs will rise, theoretically average fixed costs will begin to fall along with average total costs remaining the same (Makeham & Malcolm, 1986). Many business will start with a larger facility and implement more production and product as an example of this growth model. However, if a facility is too small for the production run and products sold, the average total costs will begin to rise and the business may need to create a new strategy that includes extending business hours, buying a larger facility, or organizing operations differently.

Feasibility Analysis

A feasibility analysis is needed to determine whether a company can make enough profit to pay off the interest and principle in a timely manner (Seidel, 2012). For this study, evaluation of feasibility will be for the coffee house and brewpub separately and then a combination of both to determine shared costs: Model I, Coffee Roasting House; Model II, Brewpub; and Model III, Combined Coffee Roasting House & Brewpub. Four points of analysis will be considered for the feasibility aspect SWOT analysis: estimated startup costs, estimated pro forma, and sales volume assessment.

DATA COLLECTION

This portion of the study considers the location of Modesto, CA and what significant factors play a role in market entry. Market entry will help determine the costs for the aforementioned models relevant to location. Other possible areas of location will not be assessed in this study, but if Modesto, CA is not determined feasible, then recommendations will be proposed for possible needed characteristics.

Location

Location for a microbrewery along with a coffee house is one of the most important factors in determining business establishment. Modesto, CA was chosen for the model because of the scarcity of breweries, convenience for the potential owner, and the large population compared to other locations in the Central Valley of California. One significant factor when selling craft beer is that it is perishable and generally deteriorates over a few weeks due to light, air, bacteria and the lack of pasteurization (Papazian, 2010). Due to this restraint, location for ingredients is important and distribution can be difficult.

Ingredients

For beer, the main ingredients are water, malt, hops and yeast. Hops and malt, depending on the demand and growth of the microbrewery industry, can fluctuate in price and become expensive creating a premium category for some craft beers (Satran, 2014). Other ingredients are not as costly and will not be considered in this study due to more availability and lower costs.

For hops, the last decade of craft breweries in the Sacramento area (See Figure 5) has led to many new hops farms around the area, allowing craft breweries to receive the freshest hops available (Willers, 2013). It has also created hop prices to rise and shortages amongst craft breweries. In 2005, a pound of hops sold for around $3.00 per pound, and now prices are well over $10.00 a pound. Considering a pound can make about 30 gallons of beer for most beers, the price can be costly (Robertson, 2015). Most macro producers do not affect the hop market because they are locked into large hops contracts and usually use hops pellets or other forms that are not as perishable as fresh hops.

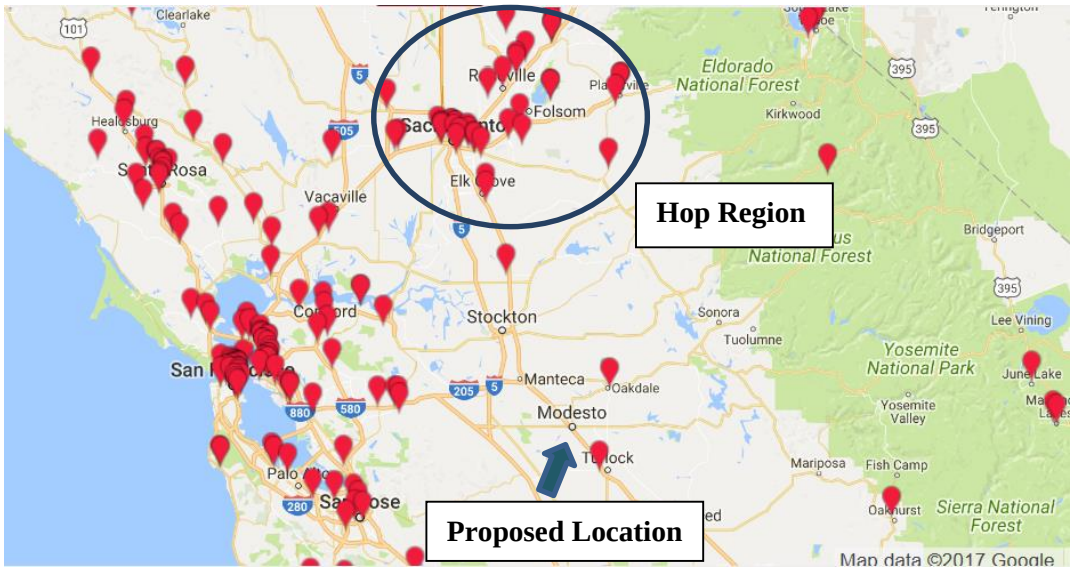

Figure 5: Craft breweries currently located in California. Brewery Members (n.d.) *California Craft Brewers Association.* Retrieved from http://web.californiacraftbeer.com/BreweryMembers/search

Most hop brokers have placed contracts on some varietals several years out, especially for larger craft breweries like Stone Brewery in Escondido, CA ("Hops Growers," 2015). This makes sourcing hops difficult for entrants due to the high

prices for fresh hops and the higher quality hops scarce availability. In 2012, a new varietal called Mosaic, with an overwhelmingly beer smell, came on the market and is already tied up into contracts through 2020 (Robertson, 2015). Many hop growers are crossbreeding these varietals to appeal to the more premium brews, causing hop prices in general to increase.

As for malt, it has to be created by germinating a mixture of dried grains by soaking them in water and drying them to develop enzyme growth (Palmer, 2006). The cost of purchasing malt is high due to the need for it to be pre-processed and packaged before shipped to the brewery. One of the largest craft brewery raw material suppliers is BSG, who built a large warehouse in San Leandro, CA in 2016 and is servicing the needs of craft breweries in northern California ("Welcome to BSG," n.d.). Recent studies have determined 100% barley and an addition of specific enzymes gives a satisfactory quality to the flavor of a beer (Zhuang, Shetty, Hansen, Fromberg, Hansen, and Hobley, 2016).

For green coffee beans, local sourcing is not as common in the Central Valley as hops and malt, but the Bay Area of California provides many suppliers because of the shipping seaport. The two important factors when sourcing green coffee beans is quality and logistics. In the last few years, bean supplier companies have looked at the micro-roasting business and have changed the package size order to be more flexible (Kaiser, 2016). Many coffee houses are popping up in the San Francisco Bay area, creating a good opportunity for shipment to Modesto, CA. Another advantage for the success of business involving beer and coffee in Northern California is that the

region offers the best natural conditions for storing green coffee beans due to low humidity and cooler temperatures (Lee, 1999).

Proximity of Location

Many factors affect the size of a brewpub and coffee house, especially a new business which is considering future growth. In order to not lose sight of the problem statement, the following list contains the top ten factors to consider when determining location, starting with the most important. For the below list of factors, the top six on the list (combining 3, 4, 5 and 6) will be considered the items most relevant to the question of feasibility. Cost will be analyzed in the Data Analysis chapter.

Location Factors

1. Cost
2. Heavily populated area
3. Space for equipment
4. Space for raw material receiving
5. Storage for raw materials
6. Refrigeration/Keg room
7. Parking/safety
8. Maximum capacity for 150 customers (mainly for events)
9. Room for expansion
10. Office space/room

Three common factors for restaurant site location include, convenience for the owner, emotional connection, and cheap rent (Raeon, 2013). When determining a

location for the brewery/coffee house, this project is limited to Modesto, CA for convenience purposes, but shifts focus away from any emotional impetus for a location decision. Determining location is important for the sake of shared costs due to the complexity of space allowed for both a brewpub and coffee house. Both require restraints of space due to equipment, storage, raw ingredient receiving, and finished goods storage. Additionally there must be an area where customers order and enjoy these craft products. It is important to consider research concerning capacity needed for both a brewpub and coffee house separately, and then to combine these with a goal of serving customers in a restaurant-sized area.

Demographics

Mapping out locations within an hour of Modesto, CA, the project considered the largest cities in the area. Table 1 shows the most heavily populated areas around the potential owner's home location, including population size in 2016, median household income from years 2011 to 2015 and the amount of time to travel to these areas from Modesto, CA.

Table 1

Demographics of Stockton, Modesto, Tracy, Manteca, Turlock and Ceres

Demographic/Factor	Stockton	Modesto	Tracy	Manteca	Turlock	Ceres
Estimated 2016 Population	307,072	212,175	89,274	76,908	72,796	48,278
Median Household Income (11' - 15')	$44,797	$48,577	$76,310	$62,364	$51,401	$48,858
Amount of Hours away from Owner's Home (min)	45	5	45	30	30	15

Capacity

One challenging factor for a brewpub is the amount of space needed to process beer from the beginning ingredients to the final product. For a coffee roasting house, space can also be a factor because space is needed for the roaster, storage, and packaging. Once the roasting process occurs, the next steps require beans to either be stored for 24 hours to allow CO_2 to gas off or be packaged right away using costly one-way valve coffee bags to allow CO_2 to gas off and keep oxygen out (Adamson, 2003). Considering raw ingredients for both coffee and beer, equipment space, capacity for at least 150 customers, and a cold storage area for a tap chilling system, a large space is needed.

Competition

Craft brewing does not participate in the same type of competition as other large beer companies like Miller, Heineken and Anheuser-Busch (Lapoint, 2013). In 2012, Lapoint interviewed several craft breweries in which they all stated it was an industry based on collaboration and supporting others in making crucial business decisions for startups (2013). Even in the last five years, this is still the case with many brewers collaborating brews together and contract brewers becoming popular. In California, there are more than 750 craft breweries as of November 2016, more than any other state (California Craft Brewers Association, 2016). Considering the Modesto, CA area, the closest brewery established is 20 miles south in Turlock, CA, the Dust Bowl Brewery. The brewpub started downtown Turlock in 2011, and they have recently expanded in 2015 to a 30,000 sq. ft. building with capacity for up to

20,000 barrels per year (Dust Bowl Brewery, 2016). The other breweries are all 100 miles away and most are less than 200 barrels per year.

As for the coffee industry, the competition is fierce in Modesto, CA, and collaboration and support are not as prevalent. Within city limits of Modesto, there are an estimated seventeen coffee shops: four are Starbucks, one roasts its own beans but is quite small, and three locations serve craft coffee with a few blends but not a wide selection (see Figure 6). For the larger, more dominant coffee shops, price usually does not deter customers. Rather, quality and location are the two attributes which drive customers (Higdon, 2016). For the smaller, more independent coffee shop owners, because they do not have multiple locations, quality and quick service must play a large role because price is hard to compete. Other independent coffee shops rely on comfortable environments and providing a third space for customers. A "third space" is an accessible location where people can congregate with free Wi-Fi, plenty of power outlets, bright lighting, and convenient drinks and snacks (Kangas, 2016).

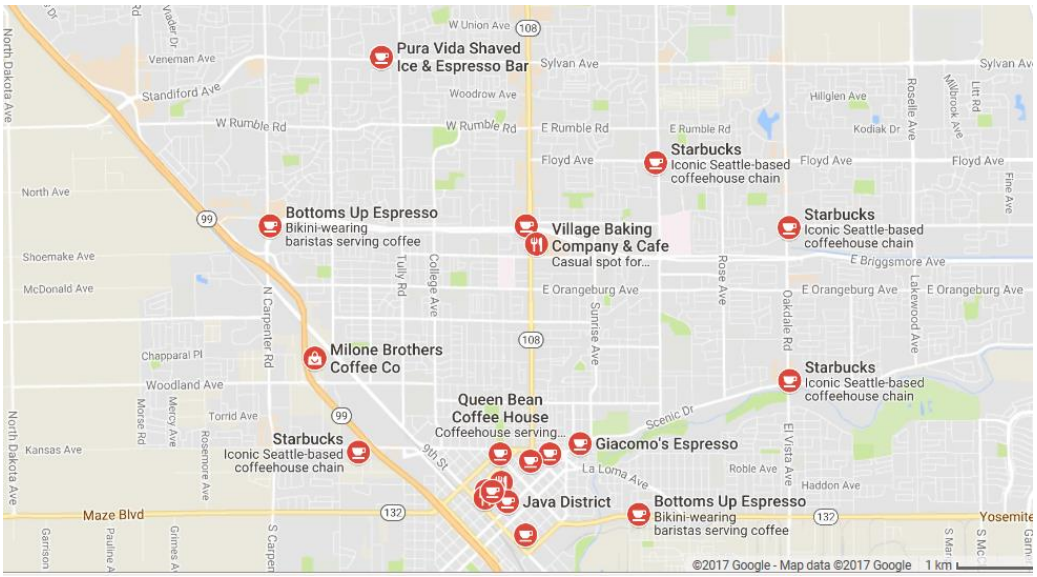

Figure 6. Map of locations with coffee houses in Modesto, CA. Map provided through www.google.com

DATA ANALYSIS

SWOT Analysis

For the SWOT analysis (see Table 2), the understandings of internal strengths and weaknesses are just as important as identifying external opportunities and threats. In order to understand what type of market situation and what strategies are needed for a new business, the SWOT analysis can give good direction. For this study, we will also consider some financial strengths and weaknesses to better support our business problem on sharing fixed costs.

Table 2

SWOT Analysis

SWOT Analysis	
Internal	*External*
Strengths	**Opportunities**
Marketing • Need for brewpubs in the Modesto, CA area *Management* • Owner has eight years experience in the alcohol industry and exposure to TTB laws and regulations • Owner has one year experience of wine marketing/sales *Finance* • Less expensive opening a microbrewery compared to a brewpub • No distribution in bottles will save on costs (only outside distribution will be kegs) • Share fixed costs by using only one establishment *Production* • Two separate sets of equipment for production, maximize utilization • Differentiating products available with the two processes	*Economic Conditions* • Craft beer is experiencing high margins with customer's willingness to pay *Industry Conditions* • U.S. craft beer sales reached 12.3% of the market share in 2016 • Younger generations are drinking craft beer more than other generations
Weaknesses	**Threats**
Management • Owner has lack of small business experience • Owner has little experience in the coffee making industry *Finance* • High startup costs	*Economic Conditions* • Economy collapse or downfall could lose customers • Location could be costly but is important *Industry Conditions* • Micro beer industry becoming flooded and could plateau in the next few years • Cost of raw material coffee has large fluctuations • Cost of hops and availability fluctuate • Increased regulations for microbreweries and brewpubs

Financial Feasibility

Data collected is based on a few assumptions needed in order to maintain comparison across all three models (see Appendix E for chart).

Startup Cost

Table 3 shows estimated startup costs for each model. Equipment calculations can be found in Appendix A. Assumptions for square footage, hours of operation, and one month of startup supplies are included across each model and rounded to the whole number with the exception of raw materials. Renovation costs for Model II & Model III are estimated per square footage. Model II, however, will need similar requirements for upgrade (fire upgrades, floor, and drainage), which ended up close to Model III's cost.

Table 3

Estimated Start-up Costs for Comparison of All Models

Estimated Start-up Costs (Model I)		**Estimated Start-up Costs (Model II)**		**Estimated Start-up Costs (Model III)**	
Assumptions		**Assumptions**		**Assumptions**	
3,500 sq ft commercial building		7,000 sq ft commercial building		10,500 sq ft commercial building	
Open from 6AM - 2PM every day (56 hrs weekly total)		Open from 11AM - 11PM every day (84 hrs weekly total)		Open from 6AM - 11PM every day (119 hrs weekly total)	
One month worth of startup costs		One month worth of startup costs		One month worth of startup costs	
STARTUP EXPENSES		**STARTUP EXPENSES**		**STARTUP EXPENSES**	
Item	**Estimated Cost**	**Item**	**Estimated Cost**	**Item**	**Estimated Cost**
Startup Equipment	$ 51,140.00	Startup Equipment	$ 82,200.00	Startup Equipment	$ 93,140.00
Legal	$ 1,500.00	Legal	$ 3,000.00	Legal	$ 3,000.00
Signs/Logos/Materials	$ 500.00	Signs/Logos/Materials	$ 1,000.00	Signs/Logos/Materials	$ 1,000.00
Insurance	$ 1,000.00	Insurance	$ 3,000.00	Insurance	$ 3,000.00
Office Supplies	$ 1,000.00	Office Supplies	$ 1,500.00	Office Supplies	$ 1,500.00
Permits/Licenses	$ 300.00	Permits/Licenses	$ 15,000.00	Permits/Licenses	$ 15,000.00
Lab Equipment	$ 1,000.00	Lab Equipment	$ 5,000.00	Lab Equipment	$ 6,000.00
Renovation	$ 10,000.00	Renovation	$ 40,000.00	Renovation	$ 40,000.00
Raw Materials	$ 362.71	Raw Materials	$ 2,529.45	Raw Materials	$ 2,892.16
Supplies - cups, etc.	$ 17,550.00	Supplies - cups, etc.	$ 900.00	Supplies - cups, etc.	$ 18,450.00
Other	$ 5,000.00	Other	$ 10,000.00	Other	$ 15,000.00
TOTAL COST	$ 89,352.71	**TOTAL COST**	$ 164,129.45	**TOTAL COST**	$ 198,982.16

Monthly Operation Cost

For simplicity of monthly operation costs, the estimates were broken into three areas: revenue, fixed costs, and variable costs.

Revenue. In order to determine revenues per month, an estimated amount of beer and coffee were considered along with the calculated cost of goods sold

(COGS). For the brewpub, considering a five barrel brewing system, a barrel is equal to 31 gallons of beer produced, and a batch of beer is 155 gallons with a 5 gallon loss. Weekly production of one batch is estimated at 19,200 ounces of beer produced per week (see Table 4). Using the COGS calculation for a low end and premium batch of beer (see Appendix C for table), and using the average, the cost per ounce of beer produced is $0.06.

Table 4

Estimated size of Beer Batch Weekly

Batch Size in BBL, Gallon, Ounces		
	BBL	**Gallons**
Batch Size	5	155
Loss		5
Total		150
Ounces Total	19200	

For beer, estimates are considered for different sizes of glasses sold, 8 oz. and 16 oz., along with kegs and growlers, and average sales estimates (in percentages) are broken down based on 22 barrels per month sold (see Table 5). The total expected sales per batch is estimated based on the amount of barrels expected to be produced and sold. The assumption is that the brewpub would make its own beer in batch per week, and if sales exceeded the amount of volume, the outside beers purchased on tap would cover the excess required. This strategy ensures that the growth is managed by the owner, and high quality beers can continue to be produced without rushing raw ingredient shipment, paying for extra labor, etc.

Table 5

Estimated Average Expected Sales per Month of Beer

Average Expected Sales and Profit per Batch				
Sales	**%**	**Ounces**	**Units Sold**	**Profit/Batch**
Glass (8 oz.)	40%	7680	960	$ 4,800.00
Glass (16 oz.)	30%	5760	360	$ 2,880.00
Growler (64 oz.)	15%	2880	45	$ 720.00
Keg (gal) (1984 oz.)	15%	2880	1.5	$ 290.32
		Total Units	1366.5	
Total Profit/Batch	100%			$ 8,690.32
Profit/BBL	$ 1,738.06			
		Profit		
BBL/Month	22	$ 38,237.42		
BBL/Year	260	$ 451,896.77		

Coffee estimates were more complex due to the advantage of high margins for specialty coffee drinks. As discussed in the literature review, large coffee establishments such as Starbucks gross most profit from specialty drinks which contain margins above 60% (Popp, 2005). Estimates for cost per ounce of coffee was calculated, and COGS were broken down for specialty drinks. Similar logic was used for low and premium blends, taking the average cost per blend (see Table 6).

Table 6

Estimated Cost for 1lb. Batch of Coffee Produced

Premium and Lower End Cost for a 1 lb Batch of Coffee			
	Amount	Cost/Unit	
Resource	Low	Low	Premium
Green Beans (lb)	$ 1.00	$ 2.45	$ 15.65
Water (gallon)	$ 4.50	$ 1.00	$ 1.00
Electrical (kWh)	$ 0.01	$ 0.01	$ 0.01
Labor (per hour)	$ 4.44	$ 4.44	$ 4.44
TOTAL COST/ 1-lb		$ 7.90	$ 21.10
Cost per ounce		$ 0.0347	$ 0.0733

Using the most appropriate calculation from pounds of beans to ounces of liquid coffee and considering a small density factor, the average cost per ounce of liquid was $0.05 (see Appendix D). Considering 100 8-ounce cups of coffee are sold in Model I (8 hours of business operation) using a $2.20 average profit margin after material costs, the total amount of estimated revenue per month is $6,600.00. In order to develop the model more accurately, coffee bag and pastry food sales were included in the revenue. Because food sales are calculated similarly for Models I & II and are only slightly increased based on hours of extended operation for Model III, food sales are considered negligible in the plan.

Fixed costs. Fixed costs were estimated based on Modesto, CA estimates for items such as garbage, insurance, and legal and accounting services. Other costs such as office expenses and cell phone costs were estimated. Depreciation was calculated

using the straight line depreciation calculation, and labor costs were estimated with an 11.8% increase for taxes, wages, and benefits to satisfy California law. In order to appropriately adjust labor across all three models, the labor cost percentage was calculated for all three models and kept within 5% of each other in order to keep labor costs similar. Mortgage costs were based on Modesto, CA average commercial square footage rent prices of $0.57/sq. ft. for all three models. Monthly expenses can be seen in Table 7 for all three models.

Variable costs. Costs included for variable expenses are electricity/gas/sewer, water, and maintenance costs (see Table 7). These costs are used as incremental costs when producing extra units. This study does not consider break even analysis.

Table 7

Monthly Expenses for the Three Models

Monthly Expenses (Model 1)	
Revenue	**Cost**
Coffee Sales	$ 6,600.00
Coffee Bag Sales	$ 2,100.00
Pastry/Food Sales	$ 3,370.30
Fixed Costs	
Rent/Mortgage	$ 1,995.00
Labor wages & taxes	$ 4,297.00
Fees	$ 20.00
Depreciation	$ 262.75
Garbage	$ 90.00
Legal/CPA Services	$ 180.00
Marketing	$ 250.00
Insurance	$ 300.00
Office Expenses	$ 150.00
Cell phone/phone	$ 150.00
FIXED COST TOTAL	$ 7,694.75
Variable Costs	
Electricity/Gas/Sewer	$ 391.00
Water	$ 230.00
Maintenance	$ 100.00
VARIABLE COST TOTAL	$ 721.00
TOTAL REVENUE	$ 12,070.30
TOTAL COST	$ 8,415.75
TOTAL PROFIT	$ 3,654.55

Costs	Percentage
Labor Cost	51%
Fixed Cost Total	91%

Monthly Expenses (Model 2)	
Revenue	**Cost**
Beer Sales	$ 38,237.42
Food Sales	$ 3,370.30
Fixed Costs	
Rent/Mortgage	$ 3,990.00
Labor wages & taxes	$ 13,263.00
Fees	$ 150.00
Depreciation	$ 303.25
Garbage	$ 220.00
Legal/CPA Services	$ 900.00
Marketing	$ 700.00
Insurance	$ 600.00
Office Expenses	$ 700.00
Cell phone/phone/TV	$ 550.00
FIXED COST TOTAL	$ 21,376.25
Variable Costs	
Electricity/Gas/Sewer	$ 861.00
Water	$ 1,440.00
Maintenance	$ 350.00
VARIABLE COST TOTAL	$ 2,651.00
TOTAL REVENUE	$ 41,607.72
TOTAL COST	$ 24,027.25
TOTAL PROFIT	$ 17,580.47

Costs	Percentage
Labor Cost	55%
Fixed Cost Total	89%

Monthly Expenses (Model 3)	
Revenue	**Cost**
Beer Sales	$ 38,237.42
Coffee Sales	$ 11,220.00
Coffee Bag Sales	$ 3,570.00
Pastry/Food Sales	$ 4,956.32
Fixed Costs	
Rent/Mortgage	$ 6,000.00
Labor wages & taxes	$ 15,345.00
Fees	$ 170.00
Depreciation	$ 329.33
Garbage	$ 310.00
Legal/CPA Services	$ 900.00
Marketing	$ 700.00
Insurance	$ 600.00
Office Expenses	$ 700.00
Cell phone/phone/TV	$ 550.00
FIXED COST TOTAL	$ 25,604.33
Variable Costs	
Electricity/Gas/Sewer	$ 1,252.00
Water	$ 1,670.00
Maintenance	$ 450.00
VARIABLE COST TOTAL	$ 3,372.00
TOTAL REVENUE	$ 57,983.74
TOTAL COST	$ 28,976.33
TOTAL PROFIT	$ 29,007.41

Costs	Percentage
Labor Cost	53%
Fixed Cost Total	88%

DISCUSSION

Discussion

In order to combine the coffee roasting business and beer business, product connection helps customers relate the two, and new customers may form. As researched in the literature review, the two industries are beginning to associate with each other on the craft front, creating new products and developing new processes. Combining ingredients along with the ability to store them in similar environments helps to cut down on space and capacity. Among the largest benefits to co-industry is the ability to create both products separately using unique equipment for startup and shutdown times while maximizing utilization of the equipment and labor.

The brewpub is a good platform to begin brewing and earn a reputation for beer, but the restaurant portion is said to bring customers in and cover monthly costs (Peter, 2003). By opening a brewpub rather than a microbrewery, savings up to 71% per 12 ounces of beer costs to not package, ship, and rely on a distribution and retailer platform is the most cost effective in the craft beer industry. This decision adds to incremental costs of selling one more unit while driving the fixed costs low.

The collaboration of the craft beer movement helps determine location of the brewpub so it is possible to source ingredients at low costs and minimize transportation costs. Coffee shop location is more specific to the location of the building and the possibility of high customer traffic. These factors play an important

role in the fixed costs, but other factors may affect different business models looking to combine as a single establishment.

Co-branding is one way to help market both products discussed in the model. Coffee houses are currently starting to partner with microbreweries to create innovative beers and even beer-flavored coffee. As mentioned in the literature review, the concept can tap into new customer channels such as coffee drinkers sampling beer products or vice versa. The risk may be the idea around contagion of beer and coffee, but the amount of new customers and word of mouth marketing creates more opportunity around this risk.

Determination of fixed costs was challenging due to unconsolidated cost information juxtaposed to variable costs which are able to be estimated. From the SWOT analysis, operating utilization can be increased due to the products being produced on separate machines: roaster equipment and brewing equipment. Following this concept, the labor can be split between these operations to cover both considering startup processes and cleaning processes which occur at different times, thereby saving on overall labor costs. Shared labor and unique equipment can contribute to operating business hours for a longer period of time throughout the day and can help offset the internal high startup costs needed in order to begin production. Considering minimized external threats, this study suggests that brewpubs and roasting houses select coffee shop location for convenience and brewpub exposure for younger generations and community involvement.

Discussion on Key Questions

Is Modesto, California a Good Location for a Brewpub/Coffee House?

Looking at the overall beer and coffee market's in Modesto, CA shows that while coffee roasting houses do exist, there are not many breweries in the local area. Modesto's population is the second highest to Stockton, CA in the area, although Modesto's household income is slightly higher. The benefit of the location is that there are not many large craft breweries in the area along with its short distance to the owner's house.

How Large Should the Brewpub and Coffee House Be in Order to Be Successful?

By researching nearby coffee houses and the only brewpub in town, it is estimated that an establishment 10,500 sq. ft. will be an appropriate size for a 150 customer capacity and the equipment needed. Because the amount of space estimated is conservative, the possibility for expansion is an option considering most craft breweries begin expanding in their first year of production. Nearly half of breweries established in 2015 increased their capacity (Satran, 2014).

How Much Capital is needed to start a Successful Brewpub and Coffee House?

According to the estimated start-up costs calculated in Figure 7, the price would be around $200,000.00 for a 10,500 sq. ft. combined coffee roasting house and brewpub. The assumptions are heavily determined by the cost of equipment (see Appendix A) which are calculated separately due to the specificity of this study. For other possible business models, some equipment may be downsized or substituted out

along with the potential to buy used equipment. In any case, the costs are estimates and account for some extra costs such as shipping and installation, but this may vary depending on the situation.

How Can a Small Business Strategize When Combining Two Separate Products and Selling Them Both with the Same Focus?

This study suggests that co-branding in a small business is beneficial to products that may be combined and share a recent increase in popularity. With high quality products and innovation, new customers tend to create positive marketing trends by word of mouth due to the loyal nature of the business. Marketing focus on selling the products individually without the possibility of consumers having contagion, was determined to not be an issue due to the collaborative nature of the two products in recent years.

THEORETICAL IMPLICATIONS AND MANAGERIAL IMPLICATIONS

Theoretical Implications

In the craft brewing industry, the industry follows a pattern of large amounts of growth followed by a significant amount of decline. Many factors contribute to the reasons behind the decline, but the coffee industry has not followed this cyclical pattern. Specialty coffee shops, along with independent coffee shops, predictably rely on consumer's disposable income, although the industries continual and gradual growth proves otherwise. With the flexibility of having both business models in one establishment, the ability to rely on one industry is possible and will, more than likely, occur at some point in the lifetime of the business. This potential for one-industry dependence also allows for small business longevity, a real concern considering the amount of failures occurring in the first few years. Another variable factor which plays a major role on costs is the physical building itself. Building costs, for this particular combination of business models, requires convenience for the coffee house and extra space for the brewpub. These implications provide variability to the business, because the costs may significantly increase as the business needs larger, conveniently-placed.

In order to determine if the brewpub/coffee roasting house model would be applicable to other establishments with shared fixed costs, further investigation is needed. Investigation around the dynamics and causal relationships of the two models combined is needed in order to determine if one product will cannibalize or flourish.

Costs related to the startup in this study are estimated, but do not contain industry-specific build out costs. With the complexity of having multiple large equipment pieces and processes for different products, the need for product isolation could add extra costs. In this model, extra license restrictions for the Alcohol and Tobacco Tax and Trade Bureau at the state and county levels are estimated. These license costs and other storage requirements may not be applicable to other business model combinations.

Managerial Implications

For the practicality of the study, Modesto, CA proved to be a potentially successful location on which to move forward. Startup costs are estimated to be around $200,000 if leasing an establishment, but could change depending on any figures not being consistent with the study. In order to ensure special needs, entrepreneurs must find the recommended 10,500 sq. ft. establishment consider a location that has room for expansion. Labor recommendations are to recognize the unique startup and shutdown processes of each industry and to maximize demand and sustain smooth and clean, in place processes.

CONCLUSIONS AND LIMITATIONS

Conclusions

The purpose of this study is to determine if it is feasible to open a brewpub and roasting coffee house in the same establishment. Brewpubs and microbreweries are expensive startup businesses, but they bring in high margins with carefully thought out strategies. Longer business hours for selling products throughout the mornings and nights proved to bring in more sales to offset variable costs. Location for brewpubs and roasting coffee houses are particularly important to success, similar to small coffee shops with high product costs. In both industries, customers demand high quality and a convenient location. Lowering costs such as equipment or fewer variety of products is a better way to reduce costs rather than to sacrifice location.

Combining a brewpub and roasting coffee house proves to be feasible financially due to the small amount of incremental costs per units sold offsetting high startup costs and equipment expenses. In order to utilize the space, with separate equipment to create products, time and space is fully consumed. By incorporating the two businesses, total costs tend to be lower due to higher variable incremental costs. This model also proves to be unique in the market, considering only a handful of breweries have introduced coffee roasting into their establishments, and most of them do not serve coffee on a daily business, they only sell coffee beans. This business could find a niche market, especially if entrepreneurs are combining industries to gain market exposure.

Limitations

When considering limitations, one area this study did not discuss is the difference in opening a microbrewery, nanobrewery, or brewpub. Each one requires a different type of license which regulates a location's ability to distribute, sell on premise, and calculate by barrel, in order to meet Alcohol and Tobacco Tax and Trade Bureau requirements.

Considering this model for other industries has its limitations due to the nature of the alcohol industry and its regulations. If other industries were to be compared, careful consideration of added costs along with incremental costs might be significantly different, thereby changing the scope. Additionally, paired industries may not be successful due to co-branding challenges where products may not pair well or may cannibalize sales due to customer perceptions. Many factors come in to play with cost when considering combining fixed costs and incremental costs. Using one of the most highly regulated industries in the United States, the alcohol industry, does help strengthen the implied costs for a startup business (Anderson, 2016).

Cost models in this study were considered to be linear, and costs were estimated assuming that one batch of beer or coffee could be sold as several different types of products. In order to remain consistent, this study attempted to only compare beer and coffee products. Other products were included, but they were irrelevant to the cost model. Costs were estimated based on available information.

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APPENDICES

APPENDIX A

EQUIPMENT COST ESTIMATES

Major Equipment List					
Equipment Name	**Capacity**	**Price**	**Depreciation**	**Coffee/Brewery or Combined**	**Notes**
Coffee Roaster	13.2 lb/hour	$ 4,800	$180/yr	C, Combined	Mill city roasters, electric roaster
Coffee Grinder/Makers/Exresso	15 gallon	$ 7,000	$133/yr	C, Combined	
5 BBL Brewing System	1500 BBL/yr	$30,000	$333/yr	B, Combined	Porter Tanks
12-tap system w/ chilling		$12,000	$466/yr	B, Combined	Kegworks/Digital Pour
Water Treatment system	5,000 GPD	$ 7,200	$440/yr	C, B, Combined	Reverse Osmosis Superstore
Chairs and Tables	100 chairs/16 tables	$13,000	$600/yr	C, B, Combined	chairs ~ $50 affordable seating, tables ~ $500 Urban Wood Goods
Food prep/Refridgerator/Dishwasher		$10,000	$1400/yr	C, B, Combined	Webstaurant Store
Shelving/Racks/Storage		$ 5,000	$400/yr	C, B, Combined	Coffee steel racks/restaurant equipment
TOTAL COST		**$89,000**	**$ 3,952**		

Major Equipment List (by Coffee House/Brewery or Combined)					
Coffee House		**Brewery**		**Combined**	
Equipment	**Price**	**Equipment**	**Price**	**Equipment**	**Price**
Coffee Roaster	$ 4,800	5 BBL Brewing System	$30,000	Coffee Roaster	$ 4,800
Coffee Grinder/Makers/Exresso	$ 7,000	12-tap system w/ chilling	$12,000	Coffee Grinder/Makers/Exresso	$ 7,000
Water Treatment system	$ 7,200	Water Treatment system	$ 7,200	5 BBL Brewing System	$30,000
Chairs and Tables	$ 13,000	Chairs and Tables	$13,000	12-tap system w/ chilling	$12,000
Food prep/Refridgerator/Dishwasher	$ 10,000	Food prep/Refridgerator/Dishwasher	$10,000	Water Treatment system	$ 7,200
Shelving/Racks/Storage	$ 5,000	Shelving/Racks/Storage	$ 5,000	Chairs and Tables	$13,000
				Food prep/Refridgerator/Dishwasher	$10,000
				Shelving/Racks/Storage	$ 5,000
TOTAL COFFEE HOUSE	$ 47,000	TOTAL BREWERY	$77,200	TOTAL BUSINESS'S COMBINED	$89,000

APPENDIX B

BEER COSTS AND PROFITS CALCULATIONS

Batch Size in BBL, Gallon, Ounces		
	BBL	**Gallons**
Batch Size	5	155
Loss		5
Total		150
Ounces Total	19200	

Average Cost/Batch, BBL, Gallon, Ounces		
Avg Cost/Batch	$	1,149.75
Avg Cost/BBL	$	114.98
Avg Cost/Gallon	$	7.67
Average Cost/ounce	$	0.06

Premium and Lower End Cost for a Batch of Beer					
	Amount			**Cost/Unit**	
Resource	**Low**	**Premium**	**Cost/Unit**	**Low**	**Premium**
Hops (lb)	3	6	$ 15.00	$ 45.00	$ 90.00
Malt (lb)	300	600	$ 1.00	$ 300.00	$ 600.00
Yeast (lb)	0.5	1	$ 60.00	$ 30.00	$ 60.00
Water (gallon)	250	500	$ 0.05	$ 12.50	$ 25.00
Electrical (kWh)				$ -	$ -
Gas (Therms)				$ -	$ -
CO2			$ 0.20	$ -	$ -
Cleaning Chemicals	1	2	$ 25.00	$ 25.00	$ 50.00
Labor (per hour)	20	30	$ 18.00	$ 360.00	$ 540.00
Waste/Sewer	100	200	$ 0.10	$ 10.00	$ 20.00
Taxes (Federal) (per bbl)	5	5	$ 7.00	$ 35.00	$ 35.00
Taxes (State) (per bbl)	5	5	$ 6.20	$ 31.00	$ 31.00
TOTAL				$ 848.50	$ 1,451.00
Cost per ounce				$ 0.0442	$ 0.0756

Different Vessel Sales Price and Profit				
Vessel	**Ounces**	**Price/Unit**	**Price/Ounce**	**Profit/Vessel**
Glass	8	$ 5.00	$ 0.63	$ 4.52
Glass	16	$ 8.00	$ 0.50	$ 7.04
Growler	64	$ 16.00	$ 0.25	$ 12.17
Keg (gal)	15.5	$ 200.00	$ 0.10	$ 81.19

Average Expected Sales and Profit per Batch			
Sales	**%**	**Ounces**	**Profit/Batch**
Glass	40%	7680	$ 4,800.00
Glass	30%	5760	$ 2,880.00
Growler	15%	2880	$ 720.00
Keg (gal)	15%	2880	$ 290.32
Total Profit/Batch	100%		$ 8,690.32
Profit/BBL	$1,738.06		

BBL/Month	22	$ 38,237.42
BBL/Year	260	$ 451,896.77

Revenue for Combined Coffeehouse & Brewpub			
Product:	Coffee Drinks	**Units**	**Assumptions**
	Number Units Sold/Monthly	5100	170 - 8 oz. cups sold per day, 30 days in a month
	MARGIN PER UNIT	$ 2.20	See Appendix A - Coffee Drink Sales Price
	TOTAL PROFIT Monthly	$ 11,220.00	
	TOTAL PROFIT Yearly	$134,640.00	Assume 365 days
Product:	Bagged Coffee	Units	Assumptions
	Number Units Sold/Monthly	510	Estimate 17 bags sold per day in a 30 day period
	MARGIN PER UNIT	$ 7.00	See Appendix A - Coffee Drink Sales Price
	TOTAL PROFIT Monthly	$ 3,570.00	
	TOTAL PROFIT Yearly	$ 42,840.00	Assume 365 days
Product:	Pastry/Food	Units	Assumptions
	Raw Materials	$ 400.00	
	Labor used to produce product	$ 1,634.50	Assume 10% labor costs
	Costs for shipping and storing raw materials	$ 50.00	Storing costs only
	Production facility expenses	$ 250.00	Costs estimated in heating
	Total Product Expenses	$ 2,334.50	
	Number Units Sold/Monthly	1500	Estimate 50 items sold a day for 30 day period
	COGS	$ 1.56	
	SALES PRICE	$ 3.00	
	MARGIN PER UNIT	$ 1.44	
	TOTAL PROFIT Monthly	$ 2,165.50	
	TOTAL PROFIT Yearly	$ 25,986.00	Assume 365 days
	OVERALL MONTHLY PROFIT	$ 16,955.50	Projected
	OVERALL YEARLY PROFIT	$203,466.00	Projected

APPENDIX C

COFFEE COSTS AND PROFITS CALCULATIONS

Premium and Lower End Cost for a 1 lb Batch of Coffee			
	Amount	Cost/Unit	
Resource	Low	Low	Premium
Green Beans (lb)	$ 1.00	$ 2.45	$ 15.65
Water (gallon)	$ 4.50	$ 1.00	$ 1.00
Electrical (kWh)	$ 0.01	$ 0.01	$ 0.01
Labor (per hour)	$ 4.44	$ 4.44	$ 4.44
TOTAL COST/ 1-lb		$ 7.90	$ 21.10
Cost per ounce		$0.0347	$ 0.0733

Converting Beans to Grounds/Batches		
Beans	**Ounces**	**Cups (8-ounce)**
1 Pound	288	36
13.5 lb Batch Size	3888	486
Loss	388	48.5
Total	**3500**	437.5

Average Cost/Batch, BBL, Gallon, Ounces	
Avg Cost/1 -lb Batch	$ 14.50
Avg Cost/Gallon	$ 6.91
Avg Cost/Ounce	$ 0.05
Average Cost/8 oz. Cup	$ 0.43

Coffee Drink Sales Price and Profit					
Drink	**Ounces**	**Sales Price**	**Price/Ounce**	**COGS/cup**	**Profit/cup**
Regular Coffee	8	$ 1.50	$ 0.43	$ 0.58	$ 0.92
Regular Coffee	16	$ 1.75	$ 0.86	$ 1.01	$ 0.74
Regular Coffee	20	$ 2.00	$ 1.08	$ 1.23	$ 0.77
Bag (lbs)	1	$ 15.00	$ 0.05	$ 8.00	$ 7.00
Iced Coffee	8	$ 2.00	$ 0.43	$ 0.48	$ 1.52
Iced Coffee	16	$ 2.50	$ 0.86	$ 0.91	$ 1.59
Frappachino	8	$ 3.80	$ 0.43	$ 1.10	$ 2.70
Frappachino	16	$ 4.20	$ 0.86	$ 1.58	$ 2.62
Frappachino	20	$ 4.85	$ 1.08	$ 1.86	$ 2.99
Caffe Mocha	8	$ 3.30	$ 0.43	$ 1.12	$ 2.18
Caffe Mocha	16	$ 4.00	$ 0.86	$ 1.62	$ 2.38
Caffe Mocha	20	$ 4.50	$ 1.08	$ 1.91	$ 2.59
Caffe Latte	8	$ 3.00	$ 0.43	$ 0.72	$ 2.28
Caffe Latte	16	$ 3.30	$ 0.86	$ 1.29	$ 2.01
Caffe Latte	20	$ 4.00	$ 1.08	$ 1.58	$ 2.42
Macchiato	8	$ 3.75	$ 0.43	$ 0.61	$ 3.14
Macchiato	16	$ 4.20	$ 0.86	$ 1.04	$ 3.16
Macchiato	20	$ 4.70	$ 1.08	$ 1.25	$ 3.45
			Average Profit	$ 1.17	$ 2.20

Revenue for Coffeehouse			
Product:	Coffee Drinks	**Units**	**Assumptions**
	Number Units Sold/Monthly	3000	100 - 8 oz. cups sold per day, 30 days in a month
	MARGIN PER UNIT	$ 2.20	See Appendix A - Coffee Drink Sales Price
	TOTAL PROFIT Monthly	$ 6,600.00	
	TOTAL PROFIT Yearly	$ 79,200.00	Assume 365 days
Product:	Bagged Coffee	Units	Assumptions
	Number Units Sold/Monthly	300	Estimate 10 bags sold per day in a 30 day period
	MARGIN PER UNIT	$ 7.00	See Appendix A - Coffee Drink Sales Price
	TOTAL PROFIT Monthly	$ 2,100.00	
	TOTAL PROFIT Yearly	$ 25,200.00	Assume 365 days
Product:	Pastry/Food	Units	Assumptions
	Raw Materials	$ 400.00	
	Labor used to produce product	$ 429.70	Assume 10% labor costs
	Costs for shipping and storing raw materials	$ 50.00	Storing costs only
	Production facility expenses	$ 250.00	Costs estimated in heating
	Total Product Expenses	$ 1,129.70	
	Number Units Sold/Monthly	1500	Estimate 50 items sold a day for 30 day period
	COGS	$ 0.75	
	SALES PRICE	$ 3.00	
	MARGIN PER UNIT	$ 2.25	
	TOTAL PROFIT Monthly	$ 3,370.30	
	TOTAL PROFIT Yearly	$ 40,443.60	Assume 365 days
	OVERALL MONTHLY PROFIT	$ 12,070.30	Projected
	OVERALL YEARLY PROFIT	$144,843.60	Projected

APPENDIX D

CAPACITY, LOCATION INFORMATION

Coffee House's in Modesto, CA Square Footage	
Name	**Approximate Size (sq. ft.)**
Starbucks - 1800 Oakdale Road	3,195
Starbucks - 3421 McHenry Ave	2,460
Starbucks - 820 Kansas Ave	2,400
Queen Bean - 1126 14th Street	1,720
Starbucks - 1801 H Street	758
Milone Roasters - 1314 Lone Palm	400

Brewpub's in Modesto, CA Square Footage	
Name	**Approximate Size (sq. ft.)**
BJ's Restaurant & Brewhouse - 3401 Dale Road	6,700

APPENDIX E

ASSUMPTIONS FOR COSTING CHART

Assumptions
Model I: Coffee House
3,500 sq. ft. building
Open from 6AM - 2PM daily (8 hours per day)
Sell 500 coffee drinks per day
Use 1.75 lbs of coffee a day, 12.25 lbs per week
Roaster capacity is 13.2 lbs/hour
Roast 13 lbs per week, 1 time per week
1 full time and 2 part time employees
Model II: Brewpub
7,000 sq. ft. building
Open from 11AM - 11PM daily (12 hours per day)
15 BBL Beer System with 24 beers on tap (different vendors)
Food sales will be the same as coffee roasting house for comparison
5 BBL batches takes about 8 hours, 1 per week
1 brewer, 3 full time and 4 part time employees
Model III: Combined Brewpub & Coffee House
10,500 sq. ft. building
Open from 6AM - 11PM daily (17 hours per day)
Sell 170 coffee drinks daily
Use 1.75 lbs of coffee a day, 12.25 lbs per week
Roaster capacity is 13.2 lbs/hour
Roast 13 lbs per week, 1 time per week
1 brewer, 4 full time and 5 part time employees