

# **Tina's MBA Thesis Compendium**

By

Bettina von Schweinitz

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by

Bettina von Schweinitz

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## Introduction

This compendium contains the Thesis that Bettina wrote for her Masters in Business Administration (MBA) from Frostburg University, Maryland. The thesis was written in 1991 about starting a Microbrewery in Montgomery County Maryland. Microbreweries, as a business was just starting across the United States in 1991.

Bettina and her father, Hans, enjoyed a casual beer with meals or on a hot afternoon. Whenever they were traveling in Germany (or other countries), they enjoyed trying the local beer with their meal. So flavor, history, and brewing of the beer was often an important contributor to the enjoyment of the beer.

In Germany, the Microbrewing is a thriving industry. Over the years, the family would take tours of a Microbrewer during their trips in Germany.

Brewing beer and wine was one of Hans' hobbies. In the family home, there would often be something brewing on the kitchen counter. And once bottled, special friends would be invited to taste the resulting brews.

In honor of her father, Bettina wrote this thesis as if her father was a partner in the business venture.

The original digital copy of this Thesis has been lost to technology upgrades. The original was written in Word Perfect on an IBM personal computer. The computer and the 5 1/2 floppy drive the file was stored on, have been donated or lost. So a hard copy of the Thesis was scanned in 2022 using an OCR app on an Apple iPhone. Although corrections have been made to areas that the scanned could not properly convert, there are still many OCR errors. Hopefully, none of these errors change to understanding of the contents.

bbl = barrels = 31.5 US gallons = 119 liters

Add photo of:

visiting microbreweries

home brewing

enjoying beer and wine

Proof read the rest of OCR errors

**GERMANTOWN BREWERY**  
**A MICROBREWERY COMPANY**

Submitted by:

Bettina von Schweinitz

In Conjunction With  
Frostburg State University  
School of Business

MGMT 693: The Field Experience

Spring Term 1991

Professor Cathy Ashley-Cotleur

Nice job A  
Good luck -

MBA Thesis

**Germantown Brewery**  
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## Introduction

This report is divided into two sections. The first section contains a sample business plan of a microbrewery. The second section contains several appendices that provide background material on the microbrewery industry.

The business plan has two objectives. The first objective is to educate the potential investor on the microbrewery business. When an unknown investor asks for information on the microbrewery this business plan will be sent. The second objective is to convince potential investors to invest in this microbrewery. The second objective is a results of microbreweries having to find financing through private investors. If the investor is seriously considering investing in this microbrewery then the financial information can be sent. Because this microbrewery and all microbreweries are privately owned, investors who want to receive the financial information should be carefully screened. The business plan does not contain any bibliographical reference. The same information is in the appendices and therein are the reference markers.

This business plan will be modified several times during the first few years. The next step will be to consolidate the financial information and distribute this information to potential serious investors. Because the business plan will constantly be changing, it will be printed on good quality paper but not set in type. The appendices to this report are more permanent.

The appendices contain all of the material or references to the material used to support the business plan. The history of microbrewery is outlined. Also, an industry analysis is done on microbreweries in and around Montgomery County. The brewing process is explained at the microbrewery level of operation. Marketing strategies and costs are researched.

A list of the needed equipment is given along with cost. Financial options are also explained or rather rejected. A complete list of references and interviewing notes are in the research appendix.

Most of the information in the appendices will be used as advertising support. The history and brewing process appendices will be type set as pamphlets that will be handed out to visitors and customers. Information in other appendices will be used to write articles to be submitted to specialty magazines and newspapers. The objective of these articles is to establish a personal reputation in the microbrewery industry.

I would like to thank Mr Alan Pugsly, Wild Goose Brewery and Mr Bob Owns, Buffalo Bill Brewery, for their kind support. Both gentleman are in the business of providing business plans and turn-key microbrewery systems. They provided their time for free to answer my questions - my phone bill though!

# **GERMANTOWN BREWERY**

A Microbrewery Company

A Business Plan

Partners:

Bettina von Schweinitz

Hans Ludwig von Schweinitz

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[1] "Suggestions for Developing a Business Plan", Maryland Department of Economic and Community Development.

## 1 SUMMARY

Germantown Brewery is a microbrewery that will be located near the new downtown district of Germantown, Montgomery County, Maryland. Germantown Brewery will provide consumers with two locally brewed beers that are made from only natural ingredients. The product targets two kind of customers. The first kind of customer currently drinks both domestic and import beer. The second kind of customer is not currently drinking beer but will drink if introduced to beer that meets their needs. Germantown's beers will be distributed both wholesale and directly to retailers. The retailers include restaurants, bars, pubs, specialty stores, grocery stores, and major wine & beer stores.

Germantown Brewery will be a limited partnership what will consist of two active partners and four limited partners. The active partners hold the position of president and vice president. The president is an electrical engineer who has experience maintaining and operating manufacturing equipment for a major manufacturing facility in Montgomery County. The vice president is the sole owner of a thriving real estate management company. The vice president has twenty years experience in the US Air Force with managing people, suppliers, and machinery.

The limited partnership will need a total of \$1 million to begin the business. The 2,500 square foot building near downtown Germanton will cost \$200,000 and an additional \$100,000 will be needed to renovate the building to accept the brewing system. A 25bbl (bbl = barrels which contain 31 1/2 US gallons or 1919 liters) turn-key brewing system from Peter Austin & Partners, Cambridge Maryland will be purchased for \$500,000. The annual capacity of this brewing system is 6,000 bbls. At the beginning six months of brewing supplies will be purchased for \$15,000. Another \$4,000 will be used to purchase miscellaneous equipment and supplies, such as brooms and gloves. The remaining \$181,000 is for advertising, legal fees, and working capital until break-even is reached.

Germantown Brewery projects that in the first year of operation, 1000 bbls will be produced and sold. In the second year, production will increase to 2000 bbls with the break-even being reached somewhere between the eighteenth and twenty-fourth month of operation. By the third year, production should approach 3000 bbls and it is expected to remain at that level. The largest part of the increase in the third year will be the result of expanding the consumer target market into neighboring counties and states.

## 2 BUSINESS DESCRIPTION

Beer has been consumed by man for longer than recorded history. Business have grown to fulfill this need. In the United States, 90 percent of the beer consumer market is dominated by the giant breweries, i.e., Anheuser Busch, Adolph Coors, Miller, and B. Heileman. The remaining 10 percent is labeled the 'high priced beer market'. This market consists of import beers and specialty beers. Specialty beers are produced by brewpubs, regional breweries, and microbreweries. In 1990 this high priced beer market consisted of 260 million gallons. Studies conducted by The Institute for Brewing indicate that the microbrewery's share of this market was 4 percent or 10.4 million gallons. This is up 33 percent from 1989 and up over 50 percent since 1988. This growth in beer drinkers for microbreweries is attributed to consumers wanting more taste from their beer and also the trend towards supporting products produced within the United States that is not associated with a large impersonal entity. Consumers are also more health conscious and the educated consumer is demanding less artificial additives in their beer and more natural ingredients.

Germantown Brewery recognizes this trend in beer consumers. Germantown beers will be made only from four natural ingredients: barely, malt, hops, and water. Yeast will be added as a catalyst but is then completely removed. The flavors will be reminiscent of the microbreweries that existed in the United States before the Prohibition era. Germantown Brewery will market the beers under two labels. The Cabin John will be a porter that is dark in color and accented by the slightly bitter taste of roasted barley and will be hopped. The Seneca Creek will be a lager that is lighter in color and is crisp, dry, and moderately hopped.

Both the Cabin John and Seneca Creek are priced 100% higher than import beers but equal to the price that microbrews sell for across the United States. The price to the consumer at the retail store is recommended to be \$4.99 a six pack. Import beers that are comparable to Germantown beers are currently priced at \$2.99 a six pack at local Germantown Beer and Wine stores. Comparable brands include Grolsch, EKU, and Wurstburg. Some import beers are priced higher, but a good portion of the price pays for history, reputation, and certification to European purity laws.

Microbrew beers are targeted towards the well educated, mid-aged, disposable income consumer. To reach these consumers, Germantown beers will be introduced through specialty stores and beer & wine stores that already carry

import beers. Later the beer will be introduced to restaurants, bars, pubs and other stores. It is our goal to eventually supplement the need for import beers.

Germantown Brewery will be a 25-bbl brew house with an annual capacity of 6,000 bbls. The term "bbl" is an abbreviation for British barrels and each barrel equates to 31 gallons. A 25-bbl brew house means that the brew kettle can only hold 25 bbls or  $(25 \times 31)$  775 gallons. The beer stays in the brew kettle around a day and is then transported to storage/aging tanks where it stays for several days. A brew house can have several storage tanks but usually only one brew kettle. Since there are about 48 working weeks with five working days a year the annual capacity of the brew house would be  $(25 \text{ bbls} \times 48 \text{ weeks} \times 5 \text{ days})$  6,000 bbls.

During the first three years of operation, which this plan covers, Germantown Brewery projects that in three years we will be able to obtain 30 percent of the high priced beer market within Montgomery by adhering to the following strategies:

- The first year of business, our goal is to concentrate on marketing and distribution to raise awareness among consumers and retailers alike. Projected goal for the first year at an average retail cost of \$4.99 a six pack is 1,000 bbls which is ten percent of the market share as described under target market herein.
- The second year, our goals will be to reinvest profits to increase production from the first year resulting in 2,000 bbls and a 20 percent market share.
- The third year, our goals are to increase production to 3,000 bbls, which will enable us to reach our objective of a 30 percent market share.

Because of the seasonal nature of beer consumption, Germantown Brewery will subcontract out the distribution. During the winter months, beer consumption decreases and maintaining a fleet of trucks will be a drain on the budget. During the summer months, beer consumption can increase so rapidly that a small fleet of trucks cannot meet demand. Germantown Brewery is in the business of producing a quality beer and all efforts both in time and money will be focused towards this objective.

### 3.0 MARKET ANALYSIS

The largest market for microbrews is the financially well off white male/female in the 25-45 age group who treats beer drinking as a serious hobby. For economical reasons the giant breweries are not targeting this market. Mr William K. Coors, Chairman & Chief Executive Officer of Adolph Coors Company states that, "since 1960, there is no way that America's large breweries, the Big Six, are able to experiment with any new long brewing beer styles, because the market possibilities is small enough were it is economically unfeasible for them, and they can't market large quantities." Therefore Germantown's primary competitors will be the import beers and beers produced by other microbreweries within Maryland, north Virginia, Washington DC, and south Pennsylvania.

#### 3.1 Description of the Total Market

As the population ages, beer consumers drink less. On the other hand, they have more disposable income than the young. Most of those baby-boomers will continue to drink Miller Lite and Budweiser, but they'll be drinking less. At the same time, a minority-but a significant minority-will start trading up and experimenting with new brands and types of beer. These people want stronger beer, like those traditional European strong beers our forefathers loved. There is no way that the giant breweries are able to experiment with any of these new/old beer styles, because the market is small. It is economically unfeasible for them to produce small quantities of any beer. The giant breweries have painted themselves into a very large, and quite lucrative, corner. But it was still a corner and in the unoccupied area fit the microbreweries.

#### 3.2 Industry Trends

The microbrewery business has been growing since 1982. The beer produced by a microbrewery is marketed in the 'high priced beer' market. Statistics published by the Institute for 'Brewing' Studies indicate that the high priced. beer accounts for about 10 percent of all beer consumed. The 'high priced beer' market consists of import beers, regional beers, beer from beer pubs, and microbreweries. By 1990 it is estimated that import beers would consist of 45% of the 'high priced beer' market and microbreweries will capture about 4 percent of this market. This is up from less than 1 percent in 1986. In 1990 there were 300 microbreweries in the US compared to 50 in 1986. These microbreweries produced 421,500 bbls in 1990, up from 64,200 in 1986. Studies by the Institute for Brewing indicate that production is still growing at a rate of 30 percent to 50 percent annually. Table I shows the national growth of the microbreweries compared to the import beers in the high-end market.

Table I. High End Market Growth Rate

	<u>Imports</u>	<u>Micro-Brewers</u>
1982	31.68%	0.22%
1983	35.38	0.28
1984	39.21	0.38
1985	42.79	0.52
1986	46.79	0.52
1987	49.13	1.15
1988	50.29	1.65
1989	47.73	2.59
1990 (est.)	45.00	4.00

### 3.3 Target Market

There is a large Segment of the target market within Montgomery County. The target market for microbrews, as defined by The Institute for Brewing, is the financially well-off male/female in the 25-45 age group who treats beer drinking as a serious hobby. These consumers will drink a beer to complement a meal. The consumer will drink a glass of beer because the flavor is enticing. This type of consumer would never drink a microbrew to quench a thirst nor will the consumer guzzle a microbrew. This consumer may still buy beers from the giant breweries but never as a substitute for the microbrew.

In Montgomery County in 1987, per the U.S. Census Bureau update, there are 238,500 people between the ages of 25-45 with an income over \$40,000. This type of Montgomery County resident is considered well-off. Beverage World indicates that 88 percent of adults in age group 25-45 drink beer in some amounts. The high priced beer market is nationally 10 percent of the beer market of all ages and income brackets. Studies by The Institute of Brewing indicate that of the well-off 25-45 age group the national average reaches 15 percent consuming high priced beer consistently. If the 25- 45 age group well-off consumers in Montgomery County follow national averages then there are  $(238,500 \times 88\% \times 15\%)$  31,482 persons in Montgomery County that are interested in drinking microbrews. This does not consider the devoted giant brewery beer drinker that on a whim drinks a microbrew nor does it consider a non-beer drinker that begins to drink only microbrews. The national beer drinker averages 20 gallons of beer a year or two

twelve ounce cans a week. This average would be high for a microbrew drinker because of the nature of the consumer. A realistic average would be around 10 gallons which equates to one 12 ounce bottle a week. Then in Montgomery County there is a potential of  $(31,482 \times 10 \text{ gallons})$  314,820 gallons for a microbrewery. This equates to  $(314,820 \text{ gallons} / 31 \text{ gallons per bbl})$  10,155 bbls. with Montgomery County's physical proximity to Washington DC, north Virginia, and south Pennsylvania the actual target market is larger. Commuters could be encouraged to buy a microbrew while commuting out of Montgomery County to their homes.

### 3.4 Competition

No other microbrewery exists in Montgomery County. Several do exist in north Virginia, Cambridge Maryland, and Baltimore Maryland. Since beers produced by microbreweries have a shorter shelf life and are associated with an area, - the microbreweries that would be competing for customers in Montgomery Country would be located in Maryland, north Virginia, Washington DC, and south Pennsylvania. Table II list the address of the microbreweries in this area. Table III lists the brew house size and capacity for the micro breweries in this area along with production in 1989. Again, the brew house size is determined by the size of the brew kettle, usually 5 bbls to 26 bbls. The brew house capacity is determined by the amount of time the beer remains in the brew kettle. The beer made by Wild Goose Brewing Company remains only a few hours in the brew kettle therefore they can brew several kettles within a day. Old Dominion Brewing Company beer requires a complete day in the kettle, therefore they can only brew a maximum of one kettle per working day. The 1989 production values are from a study by The Institute for Brewing.

Table II. Addresses of Local Microbreweries.

Baltimore Brewing Co 104 Albemarle St. Baltimore, MD 301-837-5000	British Brewing Co. 6579 Bay Meadow Dr. Glen Burnie, MD 301-760-1195
Old Dominion Brewing Co. 44633 Guilford Dr. Ashburn, VA 703-729-2402	Wild Goose Brewing Co. 20 Washington St. Cambridge, MD 301-221-1121
Virginia Brewing Co. 1373 London bridge Rd. Virginia Beach, VA 703-569-5874	

Table III. Local Microbreweries Capacity.

<u>Brewer</u>	<u>Brew House</u>	<u>Capacity</u>	<u>'89 Production</u>
Baltimore Brewing Co	17 bbl	4000 bbl	n/a
British Brewing Co.	15 bbl	5000 bbl	1,400 bbl
Old Dominion Brewing Co.	26 bbl	6000 bbl	n/a
Wild Goose Brewing Co.	5 bbl	6000 bbl	1,000 bbl
Virginia Brewing Co.	5 bbl	6000 bbl	3,000 bbl

## 4.0 PRODUCTS

### 4.1 Description of Product Line

Germantown Microbrewery will produce two types of beers: Cabin John, a porter, and Seneca Creek, a lager.

The beers will be sold in six packs of 12 ounce bottle or in kegs. The bottles will be the largest volume sold. The kegs will be used almost exclusively by beer pubs or large establishments that sell beer on tap. Microbrew is a beer that has a short shelf life. Therefore a restaurant would not be selling the volume needed to maintain a fresh supply and would not warrant the purchase of a keg. For the same reason the consumer would not request a keg from the retail store .

Cabin John is the darker heavier beer and it will be targeted towards the consumer that desires a strong flavored beer. Seneca Creek is lighter in color and in flavor. In section six the marketing strategy for both these beers is explained in detail

Promotional items will also be used to help promote the beers. These promotional items will advertise the beers name and Germantown Microbrewery's logo. Items will be products that consumers are inclined to purchase and use. A microbrew's consumers would not wear baseball caps or put bumper stickers on their cars. The consumer would wear conservatively decorated sweatshirts/T-shirts and sun visors. They would purchase coasters or posters that have color nature scene of Montgomery County and by the way include Germantown Brewery's logo. The theme behind all promotional items is functionality with conservative decorations and subdued but effectively advertising. This type of advertising is being used effectively by Wild Goose Brewing Company in Maryland and Pecan Street Brewing Company Austin, Texas,

### 4.2 Proprietary Position

Both the Germantown Brewery name and the names of the beers will be registered trademarks. The formula used for the beers cannot be registered or patented. The character and distinct flavor of the beer all come from the yeast. To protect this strain of yeast both from natural disasters and from copies, a sample will be registered with the National Collection of Yeast Cultures, AFRC Institute of Food Research, Norwich Laboratory, Colney Lane, Norwich, Norfolk NR4 7UA, England. This is as close as a microbrewery can get to holding the patent to the formula of the beers.

### 4.3 Comparison to Competitors' Products

Table V lists the microbreweries that sell within Montgomery County and a brief description of their specialty.

Table V. Addresses of Local Microbreweries.	
Baltimore Brewing Co 104 Albemarle St. Baltimore, MD 301-837-5000	Serving German-style lagers, including a helles, dunkel, pils and occasional specialty beer.
British Brewing Co. 6579 Bay Meadow Dr. Glen Burnie, MD 301-760-1195	Maryland's first microbrewery; features an English-style "best bitter" ale, as well as limited production of seasonal specialties.
Old Dominion Brew Co 44633 Guilford Dr. Ashburn, VA 703-729-2402	First Washington-area microbrewery; its German-style "Dortmunder" beer won bronze medal in '90 Great American Beer Festival.
Wild Goose Brewing Co. 20 Washington St. Cambridge, MD 301-221-1121	First microbrewery on Eastern Shore; producing range of English-style ales from "ordinary" to "best bitter" strength.
Virginia Brewing Co. 1373 London bridge Rd. Virginia Beach, VA 703-569-5874	Area's first microbrewery; producing range of German-style lagers, including perennial award-winning doppelbock.

Basically all microbreweries make two kinds of beers, English and German. Even if several microbreweries make the same kind of beer the flavors are so different and unique that consumers will either show a strong preference toward one brand or the consumer will buy the brand that at that moment will meet the demands of taste. By definition the effective selling area of microbrewery is small. In the United States the area may include one county and the immediate neighboring counties. If a microbrewery is selling several counties away, it may be to fill in a void because no local microbrewery exists or the local microbrewery cannot meet demand. The only brewery that is selling large quantities in Montgomery County is the Baltimore Brewing Co. Baltimore Brewing Co is also selling a German lager. We believe that by producing a stronger tasting lager and complementing it with a lighter porter that Germantown Microbrewery can successfully compete against Baltimore Brewing Co in Montgomery County. We feel that Baltimore Brewing Co is currently filling a void in Montgomery County and they have no interest in expanding within Montgomery County.

## 5.0 MANUFACTURING PROCESS

### 5.1 Materials

Materials can be either equipment or supplies.

The equipment ranges from copper brewing Vessels at \$250,000 each to breathing filters (used when handling dusty grain milling) at \$2.50 each. Germantown Brewery will buy a turn- key brewing system for \$500,000. An additional \$15,000 will be used to buy the smaller miscellaneous equipment that is always needed to run a microbrewery.

Supplies are those materials that are consumed or after one use cannot be reconditioned for reuse. The supplies that are the most important are the ingredients and the packaging. The beer is made from water, barely, hops, malt, and additives. The additives are chemicals used for water treatment and for beer clarity. Chemicals used for water treatment are acidifiers to bring the ph up to 6.3ph. These chemicals stay with the beer. The chemicals used for beer clarity stay with the sediment and are drained before the beer is packaged. The packaging includes bottles, caps, kegs, six-pack cartons, cases, and a variety of labels. The cost of supplies will vary with the demand. It is estimated that to produce the 1,000 bbls in 1990 the cost of the ingredients alone will be about \$26,000. The break-down is shown in Table VI.

Table VI. Quantity and Cost of Supplies

Table III. Quantity and Cost of Supplies			
<u>Supply</u>	<u>Quantity 1,000 bbls</u>	<u>Cost/ Unit</u>	<u>First year Expense</u>
Malt	55,172lbs	10.00/50lb	11,034
Hops	490lbs	23.00/50lb	1,153
Yeast	1,309lbs	400.00*	400
Water	15,000bbls	30.00/1,000 gallons	13,950
Total			\$26,537
* one time cost because yeast can be used again. It also grows.			

## 5.2 Sources of Supply

The following is a list of suppliers that Germantown Brewery is currently establishing contracts with or will. buy from. Germantown Brewery believes in maintaining a good relationship with the suppliers.

Coasters: American Coaster Company, 527 Wheatfield Street, PO BOX 610,  
North Tonawanda, NY 14120, 716-693-6540

Labels: Creative Label/Bamse lithographing Company, Incorporated, 7413  
Pulaski Highway, Baltimore, MD 21237, 301-866-4700

Six pack labels: Diversified Packaging Products Incorporated, 1265 Pine Hill  
Drive, Annapolis, MD 21401, 301-974-4411

Chemicals: GAF Corporation, 2407 Park Place, Evanston, Illinois 60201, 800-543-  
1027 -- Beer stabilizer products, surfactants and sanitizers

Bottles: Ownes-Brockway Glass Containers, One Seagate OSG 25, Toledo, Ohio  
43666, 419-247-5000

Wines Incorporated, 1340 Home Avenue, Akron, Ohio 44310, 800-321-  
0315

Kegs: Spartanburg Steel Products, Incorporated, PO Box 6428, 1290 New Cut  
Road, Spartanburg, SC 29304, 803-585-5211

C02: Thermice Corporation, 650 Grove Road, Thorofare, New Jersey 08086, 800-  
523-999

All ingredients: Miracle Feeds Incorporated, 544 North 4th Avenue, Onalaska,  
Wisconsin 54650, 608-783-3337

Crosby & Baker, 999 Main Road, Westort, Massachusetts 02790, 800-992-  
0141

Malt: Briess Malting Company 250 West 57th Street 1020 New York, NY  
10107, 212-247-0780

Froedtert Malt Corporation PO Box 712 Milwaukee, Wisconsin, 53201,  
414-671-1166

A. Gusmer Incorporated, 27 North Avenue E., Cranford, New Jersey 07016,  
201-272-9400

Schreier Malting Company, 704S. 15th Street, Sheboygan, Wisconsin  
53081, 414-458-6126

Specialty Products International, PO Box 784, Chapel Hill, NC 27514, 919-929-  
4277

Hops: CMA-German Agricultural Marketing Board, 950 Third Ave, 25th Floor,  
New York, NY 10022, 212-753-5900

George Segal Hop Company, 19 Huguenot Drive, Larchmont, NY 10538,  
914-834-4017

Yeast: National Collection of Yeast Cultures, AFRC Institute of Food Research, Norwich Laboratory, Colney Lane, Norwich, Norfolk NR4 7UA, England, 0603-56122

Posters and Displays: Johnson Litho Graphics of Eau Claire, Ltd., 2219 Galloway St., Eau Claire, WI 54703, 715-832-3211

Six pack packages: Mead Packaging, P0 box 4417, Atlanta, GA 30302, 404-875-2711

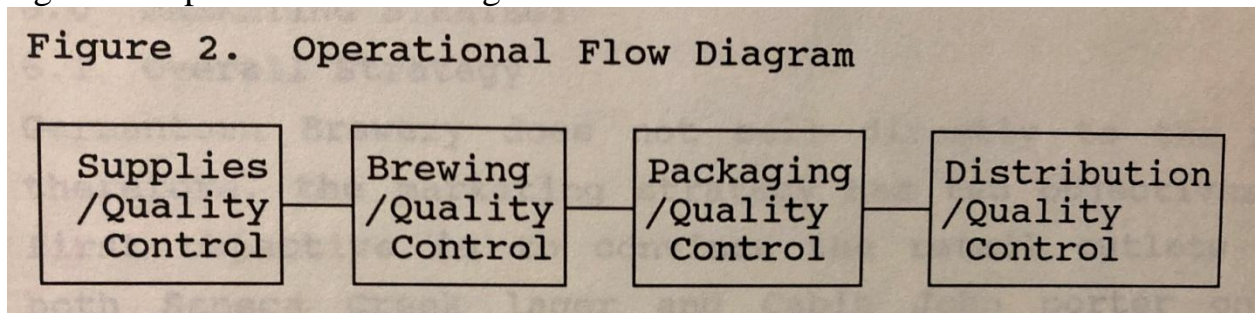
### 5.3 Production Methods

Embedded within the production process is a commitment to quality control. The flow of operations will be as diagrammed in Figure 1.

Figure 2 shows a pictorial of the production method. The production can be broken down into several operational procedures.

- a. The first is purchasing of supplies and inventory control.
- b. The second is brewing process.
- c. The third is packaging into bottles or kegs.
- d. The final procedure is shipping to the designated distributors and retailers.

Figure 1: Operational Flow Diagram



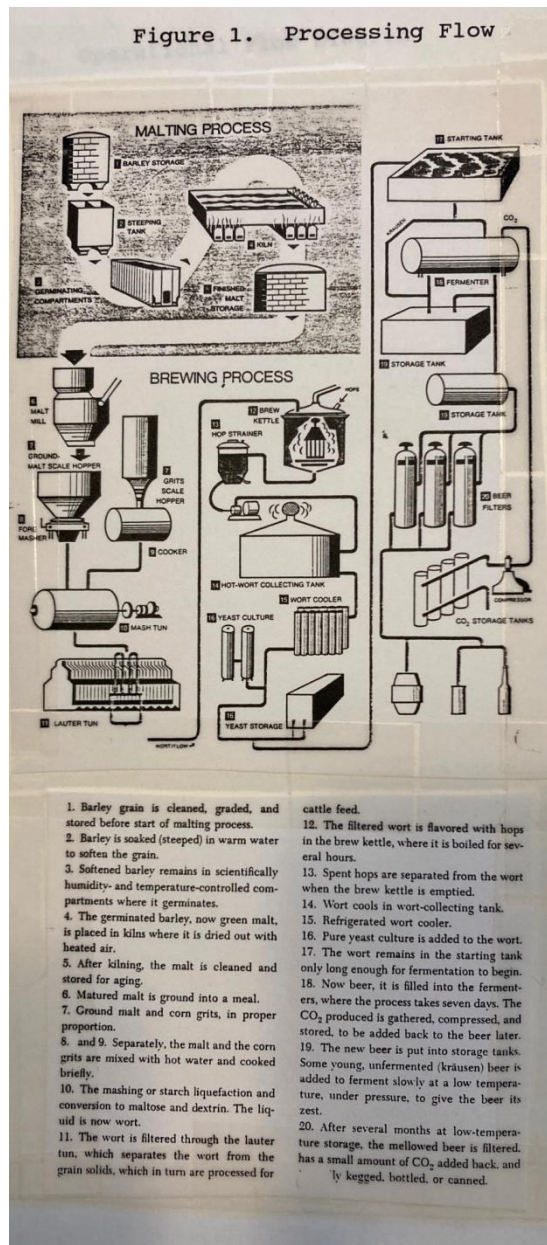


Figure 2: Processing Flow

Much of the brewing process will be manual but still within the limits of one person monitoring. The packaging process will be semi-automatic. The bottling machine will be manually loaded with bottles but the washing, filling, sealing, and labeling will be automatic. The bottles will then be manually off loaded into six packs then into the cases. The packaging process can be handled by two people.

## 6.0 MARKETING STRATEGY

### 6.1 Overall Strategy

Germantown Brewery does not sell directly to the public therefore, the marketing strategy has two objectives. The first objective is to convince the retail outlets to put both Seneca Creek lager and Cabin John porter on their shelves. The second objective is to educate the potential customers. The education includes defining a microbrewery and describing what it symbolizes. Once a customer is educated then their curiosity should result in them trying a microbrewery beer and maybe they will find Germantown Brewery products meet their taste needs.

The marketing strategy targeting the retail outlets includes the following:

- a. Meeting with the managers/owners of the stores, restaurants, and pubs
- b. Setting up a booth at trade shows where managers/owners of these retail outlet attend to learn of the newest products.
- c. Advertising in regional trade magazines.

The microbrew consumer spends a lot of time commuting between home and their well paying jobs. Therefore, Germantown Brewery will be advertising on the radio during commuting hours, especially on Thursday and Friday. This way the names, Seneca Creek and Cabin John will be fresh in the consumer's mind when they purchase their weekend allotment of beer . The target consumer then spends the weekend. browsing through specialty magazines while wear conservatively decorated leisure cloths . Therefore , the marketing strategy targeting the consumer includes the following:

- a. Advertise in specialty local magazines/newspapers for the beer enthusiast.
- b. Posters displayed at the retail outlets.
- c. Selling of sweatshirts, 'T-shirts, Visors, coasters, beer steins, bottle openers, and posters at retail outlets.
- d. Radio spots during Thursday and Friday rush hour

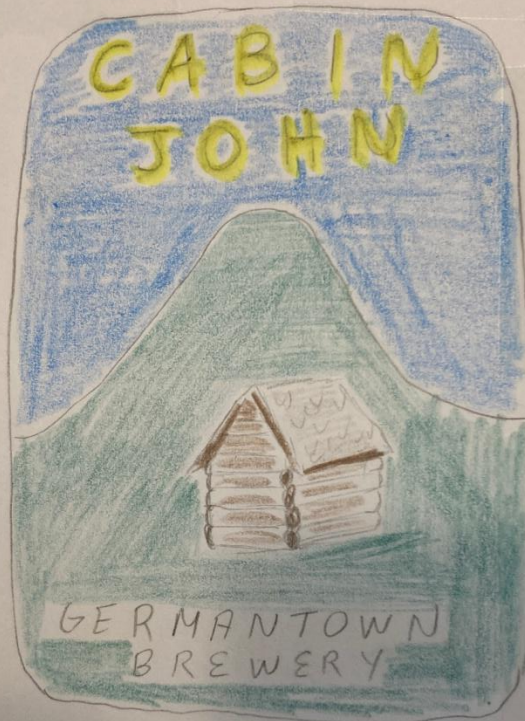
The philosophy behind both marketing strategies is that the beer is local and represents the character of Montgomery County. The philosophy will also include that the beer is made from natural ingredients and is made only for the beer consumer that enjoys good taste. Cabin John is targeted toward consumers that want a strong flavored beer. Seneca Creek is targeted toward the lunch crowd or the consumer that wants a light flavored beer.

Figure 3 shows the Germantown logo. Figure 4 and 5 show the Cabin John and Seneca Creek labels respectively. Any one of these three will appear on the non-alcoholic items that are sold to the public.

To promote the feeling that Germantown Brewery is a local community brewery, special tours of the brewery will be offered. Tours will be by appointment during the week and on walk in bases on Saturdays. Germantown Brewery will not be able to sell any beer on the premises but a gift shop will be located at the end of the tour where the public can purchase 'T'-Shirts, coasters, and a host of other items so that they will remember Germantown Brewery.

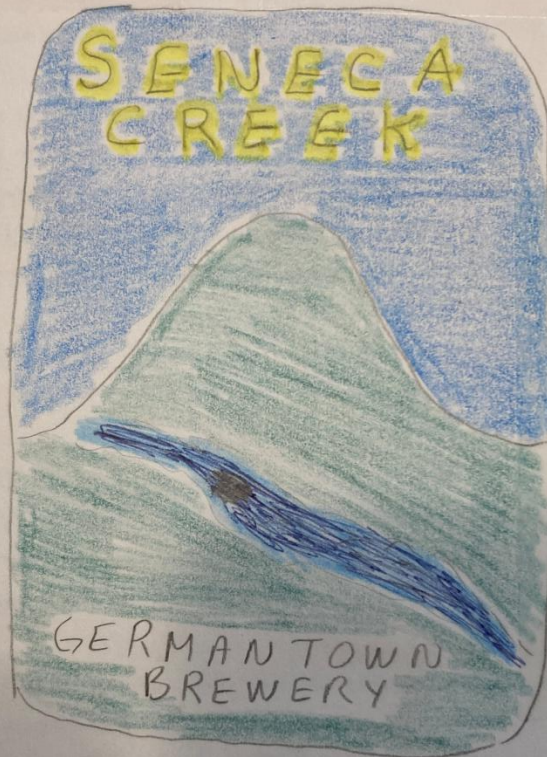


Figure 4. Cabin John Label



Lettering: Gold  
Sky: Blue  
Sugarloaf Mtn: Green  
Cabins: Brown

Figure 5. Seneca Creek Label



Lettering: Gold  
Sky: Blue  
Sugarloaf Mtn: Green  
Creek: Blue

## 6.2 Pricing Strategy

Germantown Brewery's pricing strategy is compatible with the competition. The beers sell for higher than the import beers but in the same range as the other microbrews. Microbrews are sold for a premium for several reasons.

- a. The distinct flavor difference between microbrews and the giant brews.
- b. Microbrews are brewed locally and represent the character of the area.
- c. Microbrews are made from all natural ingredients.

Seneca Creek lager and Cabin John porter will be sold for \$4.99 a six pack, the same price as other microbrews.

## 6.3 Sales Strategy

There are two elements to the sales strategy. The first deals with the distributors and the second deals directly with the consumer.

There are two types of distributors. The first type involves Montgomery County where the distributor is the County Liquor Board. The second type involves the neighboring counties. During the first quarter of operation Germantown Brewery will target distributors of beer to specialty stores (health stores) and beer & wine stores that already sell import beers. In the second quarter, Germantown Brewery will work with distributors for the grocery stores and general beer & wine stores. We will offer the standard commission on sales for microbrews of 25 percent. This the current percentage being offered by Wild Goose Brewing Company in Maryland. During the third and fourth quarters we continued to expand our distribution to restaurants and pubs. We will also offer the standard 25 percent commission on sales to the manufacturer's representatives that distribute to the restaurants and pubs.

The second element of the sales strategy is directed at consumer market. The same sales strategy applies to Montgomery County and neighboring counties. The main objective is to stimulate initial purchases of the product and maintain those customers through re-purchase. During the first year Germantown Brewery will spend the remainder of the initial \$1 million, about \$181,000, on advertising and sales promotions. The amount, spent, on should decrease after the first year. After the first year, word of mouth advertising will compensate for more than enough for the lack of increase in advertising budget. Also, less advertizing will need to be directed towards educating the consumers and retailers on microbreweries. Our sales promotion strategy to achieve these objectives are:

- a.” Obtain in-store displays for a 10 six-pack in-store display. This will only be established in the specialty stores and beer & wine stores.

b. Along with the in-store display, we will set up in- store sample displays. The customers will be offered a small 2 ounce sample. The display would describe the microbrew by listing the ingredients, where it was brewed and what a microbrew stands for.

c. We will also be attending some of the in-store sample displays. Besides explaining and help to promote the microbrews we will showing the customer who the local people are behind the microbrew.

d. We will be advertising in local newspapers (Gazettes) and local magazines that sell to our target market. These magazines would include specialty magazines for the beer drinker such as BURP, Barleycorn, Beer Enthusiast, and William's Brewing. Some advertising will also be done in national magazines that have regional advertising versions.

e. We will be setting up displays at local shows that attended by our target market. For example, sailboat shows, horse shows (including polo games and steeple chase races), dog/cat shows, etc. During these shows we will offer the 2 ounce samples, brochures, and discount coupons for \$1.00 off redeemable at the stores currently carrying the six-packs.

## APPENDIX A HISTORY

Beer has been consumed by man for longer than recorded history. Anthropologist Solomon Katz from University of Pennsylvania, believes that the discovery that fermenting barley created an intoxicating brew lead to the civilization of man [37]. Other experts question Mr. Katz's conclusion, but they agree that evidence indicates that beer consumption began around the time man began to cultivate crops. [61] Since then, beer has been an intricate part of every culture. At times beer has been a victim of social norms but more often beer has adjusted to follow social changes. As a result of these changes several different types of beer and breweries have developed. One type of brewery is called a microbrewery.

Although microbreweries may seem to be the new member in the United State's beer market, they are not.

"A Pilgrim diary records that they stopped exploring and landed at Plymouth Rock because their supplies were running low, "especially our beer." George Washington had a brewery at Mount Vernon, and if the truth be told, many a crock full was brewed behind the wood stoves of old Dorchester County." [32]

In world history, microbreweries date even further back. The crooks of beer fermenting in the kitchens of the pharaohs' Egypt are marked with hieroglyphics. [32] History, though, has not been kind to microbreweries. In Great Britain, microbreweries are being bought out or run out of business by giant breweries. [20] In United States the giant breweries have dominated the beer market for years. The giant breweries spend generously to advertise their products while selling their product at a low price. Because of this combination, the giant breweries have control over most, of the beer and ale consumed. Since beer by microbreweries sells at a higher price, it is very difficult for microbreweries to find a market.

But the market is being created by the giant breweries themselves. As the population ages, beer consumers drink less. On the other hand, they also tend to have more disposable income than the young. Most of those baby boomers will continue to drink Miller Lite and Budweiser, but they will be drinking less. At the same time, a minority-but a significant minority-will start trading up and experimenting with new brands and types of beer- These people want stronger beer, like traditional European strong beers. There is no way that the giant breweries are able to experiment with any of these new/old beer styles, because the market is small. It is economically unfeasible for them to produce small quantities of any beer. The giant breweries have painted themselves into a very large, and quite lucrative, corner. But it was still a corner. [61]

The part of the market not dominated by the giant breweries is called the high priced beer market. The high priced beers consisted of 10 percent of the total beer market in 1990. Microbreweries, brewpubs, and regional breweries captured 4 percent of this total high priced beer market.

How large of a market share the microbreweries have can be calculated from statistics provided by the Institute for Brewing Studies. In 1990, the total beer consumption was 2.6 billion barrels of beer. The high priced beer market is about 10 percent or (2.6 billion x 10%) 260 million barrels. Microbreweries, brewpubs, and regional breweries captured 4 percent or (4% of 260 million barrels) 10.4 million barrels. In 1990, the regional breweries produced over 8 million barrels. [60] Therefore the microbreweries and brewpubs must have produced the remaining 2.4 million barrels. There were some 300 microbreweries and brewpubs in existence in 1990. [60] If the market was evenly distributed each brewery could have potentially sold (2,400,000 barrels / 300) 8,000 barrels or (8,000 barrels x 31 gallons/ barrel) 248,000 gallons in one year alone. [6] By definition a microbrewery is limited to a maximum of 15,000 barrels and a brewpub is limited to 2,000. Profitable microbreweries, for example Wild Goose in Maryland[31] and Pecan St Brewery in Texas[34], produce s thousand barrels annually or more. The market share may be small compared to the overall market, but it is anything but saturated with producers.

The following is a list that provides definitions of the different type of breweries.

### **Breweries Types**

**Giants:** The giant breweries that consists of 90% of the market are Anheuser-Busch, Adolph Coors (which bought Strohs breweries), Miller and G. Heileman. These breweries produce millions of barrels of beer. They have a national distribution system. Also, they produce multiple flavors of beer.[60][38]

**Micro-breweries:** Produce less than 15,000 barrels a year. Most notable are New Amsterdam of New York, Anchor Steam in San Francisco, Samuel Adams by The Boston Beer Company, Olde Heurich, New' Amsterdam, and ZMendocino Brewing Company.[36][38][60] Micro breweries specialize in relatively strong-flavored, amber-colored beers, ales and stouts, which, they sell in a relatively' small geographic area.[36] In 1989 there are around 60 microbreweries.[36]

**Brewpubs:** These produce less than 1,000 barrels a year and usually only have a license to sell beer on the premises. Sisson's in Glen Burnie is an example of a brewpub. The beer is produced on the premises.[60]

**Contract Breweries:** These breweries use the facilities of a larger brewery but use their own formula. Although these beers may be sold in a localized area as locally produced beers, many times the facilities of the larger brewery may be in another state. The contract brewing company is responsible for marketing, selling, and distributing its beer to wholesales and retailers.[60]

**Craft Breweries:** These breweries usually started as microbreweries but they now produce more than the 10,000 barrel limit for a microbrewery. Shiner of Texas is considered a craft brewery. Anchor Steam in San Francisco is another example of a craft brewery.

**Regional Breweries:** These breweries fill the gap between the craft breweries and the giants. Lone Star of Texas is considered a regional brewery. The difference between a craft brewery and regional brewery is vague. Which title 'the, brewery' adopts is more dependent on the marketing strategy and target consumer market.[60]

The following defines the various beers that are available in the United States from any size brewery.

### **Definitions of Beer Types**

**Ale:** Ale is fruitier, fuller-bodied, less sweet and more copper-colored than lager.

Ales are produced when the fermentation takes place at the top of the batch and at a faster pace.[38] Ales are usually conditioned for a shorter period of time than their continental counterparts. Ales are representative of the British brewing tradition.[2]

**Light Ales:** (pale ales, golden ales, brown ales, bitters) Gold to dark chocolate, maltiness and hoppiness vary, mildly carbonated. Ales cover the spectrum of flavor and body. As a rule, ales tend toward a more winey/estery' palate due to faster fermentation, and shorter conditioning period. [2] Alcohol content by weight is 2.6 to 4.5 percent for brown ales, 3.0 to 7.0 percent for pale ales, and 3 to 4.5 percent for golden ales.[60]

**Scotch Ale:** A style originating in Scotland, and a term now used in Belgium (where it is often known as a Christmas ale), France and the United States. Scotch ales are generally strong, amber to dark, with a pronounced malt accent evidenced in residual sweetness. a full, chewy mouth feel and low hopping rate. It is less attenuated and darker than an English ale. With a wide range of gravities these ales are often classified as light, heavy, export and wee heavy. The alcohol content by weight is 4.8 to 6 percent.[60]

**India Pale Ale (IPA):** Originally brewed to travel by ship over vast distances, IPA has a high alcoholic content and a high hopping rate. A very strong ale,

although very pale in color. The use of water high in mineral salts in conjunction with the hops creates a dry brew with an assertive hop bitterness. Alcohol content by weight is 4.6 to 5.7 percent.[60]

Amber/Vienna: An amber or pale, copper-colored lager, the amber lager has medium alcohol, a light distinct malty aroma and sweetness is balanced by a clean bitterness. Alcohol content by weight is 3.8 to 4.3 percent.[60]

American Lagers: Using the European style as a reference the American\_ lager has a very light body and flavor, often resulting from a very clean fermentation and the use of adjuncts such as corn or rice. It is aggressively carbonated. Alcohol content by weight is 2.9 to 3.9 percent.[60]

American Light Lager: These are lighter than the American lager in overall calorie content; at least 25 percent. Alcohol content by weight is 2.8 to 3.5 percent.[60]

American Premium Lager: Quite similar to the American lager, but with a \_ decidedly lower adjunct level, the American premium lager is an effort toward a bigger flavor profile and alcohol content. Alcohol content by possibly increased weight is 3.5 to 4.0 percent.[60]

American Premium Dark Lager: The dark variation Alcohol content by of the American premium lager. weight is 3.5 to 4.4 percent.[60]

American Steam Beer: An amber lager brewed at ale temperatures, steam beer is the only beer style currently considered indigenous to America. The warm fermentation creates some ale character. Anchor, the sole representative of this brewing tradition, has a substantial body and a strong hop character. Alcohol content by weight is 3.7 to 4.3 percent.[60]

American Lager-Ale: A uniquely American term for a mild, pale, light-bodied ale, these beers are hybrids that include warm bottom fermentation with cold lagering or warm top fermentation with cold lagering, or a blending of top- and bottom-fermented beers. They are an ale version of American lagers and are often referred to as a cream ale. Alcohol content by weight is 3.4 to 4.5 percent.[60]

American Wheat: American wheat beers are a new style and can be as ales or lagers. Noted for subtle fruit flavor and typically brewed with half wheat, American wheats have varying hop rates and a noticeable sharp, tangy, wheat flavor. Alcohol content by weight is 2.8 to 3.6 percent.[60]

Barley Wines: Beer that is deep gold to ebony. Maltiness and hoppiness are both high. Barley wines exhibit a winery smoothness due to their lengthy maturation. Barley wines have the highest alcohol level of any beers. Alcohol content by weight is 6.7 to 13 percent [60]

Berliner Weisse: This light-bodied, pale, Berlin style of Wheat beer 15 top-fermented and only lightly popped- It has a sharp, lactic sourness and

acidity, with high carbonation and low alcohol content. It is fermented with a mixed culture of yeast and bacteria. Preferably consumed with a flavored syrup, it has a noticeable yeast character. Alcohol content by weight is 5 percent. [60]

**Bock:** Deep gold or brown/black, malty body with moderate hops, and a sweet finish. Bocks have more alcohol than most beers. [2] Alcohol content by weight is 3.8 to 5.8 percent.[60]

**Helles Bock** A strong, malty, bottom-fermented beer with mild hop bitterness. Helles are golden in color and brewed in Germany to celebrate spring. Alcohol content by weight is 4.5 to 5.5 percent.[60]

**Doppelbock** Malty and bottom-fermented, with a strong alcoholic content. Traditional German-style Doppelbocks can be identified by the "ator" ending in their name. Doppel is German for double. Alcohol content by weight is 5.5 to 10 percent.[60]

**Eisbock** These are extra-strong Doppelbocks, created by freezing and extracting some of the water. Alcohol content by weight is 6.5 percent or higher. [60]

**Dry:** Brewed twice as long as popular-priced beer therefore more sugar is converted into alcohol and there are less calories. Japanese dry beers contain 5% alcohol while US dry beers contain 3.9%, and popular-priced beer is 3.0%. Dry beer's taste is more potent, crisper, less sweet, with no heavy aftertaste.[36]

**European Dark/Munchner Dunkel:** From the German tradition, European darks and Munchner Dunkels are dark lagers with less sweetness and more hops and carbonation than a brown ale. Characterized by clean, subtle, crisp delicateness, the European darks are darkened with the addition of amber or roasted malts. Alcohol content by weight is 3.6 to 6 percent.[60]

**European Pils:** Originating in Plzen, Czechoslovakia. European Pilseners are well-balanced pale beers with high carbonation and a light to medium body. They exhibit clean flavor and a distinct noble hop aroma. Alcohol content by weight is 3.4 to 4.5 percent.[60]

**Faro:** Moderately carbonated, faro resembles young lambic- cloudy and golden yellow - with the addition of caramel and raisin aromas and the sweet taste of the added dark candy sugar, which results in a fruity and complex flavor. Alcohol content by weight is 3.6 to 5 percent. [60]

**Framboise:** Framboise is produced by blending raspberries with an old lambic, creating a second fermentation. Ruby red with a pronounced raspberry aroma that almost masks the sour character, a framboise is quite dry, sour and astringent. Alcohol content by weight is 2.9 to 4.6 percent.[60]

- Gueuze: (pronounced GERZ) . A blend of young and old lambic beers, which results in a sweeter beer. The difference is not unlike that between a single malt whiskey and a blend.[8] Alcohol content by weight is 4.4 percent.[60]
- Herb: Herb beers are any beer using herbs or spices other than hops to create distinct qualities. An example would be an ale brewed with ginger.[60]
- Lager: Lager is the world's most popular beer and is made from malt and hops and water. Lager is a bottom brew, that is, the yeast does its work at the bottom of the barrel. Lager is golden colored, clear, bright, and sparkling with a distinct hop flavor.[38] They undergo a cold storage (lagering) to condition them. Lagers are usually more carbonated than ales.[2] Traditionally German or Continental beer.[2]
- Light lager: Straw to deep gold, generally crisp, dry, and moderately hopped.[2]
- Dark lager: Reddish Brown to ebony, similar to light lager in taste, body and carbonation, Sometimes a slightly toasted flavor is evident. The dark color is due to the use of roasted grains or caramel.[2]
- Kolsch: A distinctive, top-fermented Alt-style beer originating in. Cologne, West. Germany. Kolsch is pale, gold in color, with a complex hop character and a slightly dry, winy and sweet palate. Alcohol content by weight is 3.5 to 3.9 percent.[60]
- Kriek: Kriek combines the characteristics of traditional gueuze with the fruit and pit aromas of whole cherries. The added young lambic contributes a residual sweetness. Ruby red, with vanilla and caramel notes added to the strong cherry flavor, kriek has an intense sourness balanced by the residual sweetness. Alcohol content by weight is 2.9 to 4.6 percent.[60]
- Lambic: A beer naturally fermented by atmospheric yeasts and other microflora. A straight lambic has little carbonation and, for beer, an :unexpected sourness. Fruit flavors are often added, resulting in framboise and kriek (pronounced CREEK) beers.[34] Alcohol content by weight is 3.6 to 5 percent.[60]
- Maerzen/Oktobertfest: Maerzen, a "March" beer, is a medium-strong lager served during Oktoberfest. Similar to Vienna, only stronger, the dark golden to amber-red Maerzen has a good malty flavor slightly overshadowing the underlying hop bitterness. Alcohol content by weight is 3.8 to 6 percent.[60]
- Malt liquor: Malt liquor is generally little more than beer with a higher alcohol content.[36]
- Pilsner: Pilsner was created 700 years ago as the first clear, gold-colored beer. A pilsner is a lager with more hops and therefore a more bitter flavor.[38]
- Popular Priced: While most other beers use 100% barley, popular-priced beers are a blend of 60% malt and 40% rice and corn. Popular-priced beers are light in color, body and flavor. [38] Popular-priced beers cost less than the premium beers. Examples of popular-priced beers are Busch, Old Milwaukee,

Milwaukee's Best, Schlitz, Pabst Blue Ribbon, Keystone, and Keystone Light.[62]

Porter: Porter is full-bodied, bitter sweet ale made with roasted, unmalted barley.

Porter is a very dark ale, sometimes sweeter as a result of using heavily roasted barely.[38] Alcohol content. by 'weight. is 4 to 5 percent.[60]

Premium: A name used by the giant breweries to categorize their heavier and more costly beer brands.[60]

Rauch: A "smoked" beer, Rauchbier is made by a number of different processes.

Usually the malts are lightly roasted in a smoky atmosphere, imparting smoke flavor to the beer. Often a traditional style with an added smoke quality, Rauchbier necessitates a smooth balance between the inherent qualities of the beer and the smoky flavor. Traditional smoked beers from Bamberg Germany are noticeably full in body and malty, the hop bitterness not predominating.[60]

Saison: Saison is a Belgian summer beer, sharply refreshing and faintly sour.

Alcohol content by weight is 5 to 7 percent.[60]

Stout: Stout is darker, richer and slightly more bitter than Porter with a hoppier, maltier taste.[38]

Dry Stout: Bitter hopping and the use of roasted, unmalted barley create a clean,

bitter, roasted-coffee character with slightly noticeable hop flavor and

aroma: This is the Irish stout style, classically typified by draft Guinness.

Alcohol content, by'weight. is 3.5 to 8 percent.[60]

Sweet Stout: The sweet, or milk, stout is in the English style, sweetened with

sucrose and given more body with "milk" or lactose, sugar just before

bottling. Pasteurization stops any further fermentation, resulting in a very

sweet black ale. It has a less roasted bitter taste and more mouth feel than

dry stouts. Alcohol content by weight is 3.0 to 5 percent.[60]

Imperial Stout A strong, dark copper to black stout originally brewed as a winter

warmer for shipment to czarist Russia. Imperial stout is an extremely rich ale

with a strong bouquet, a malted barley taste, and fruity characteristics.

Alcohol content by weight is 5.9+ percent.[60]

Super Yeast: Super Yeast is a new type of beer Japan is going to produce to rival

Dry beer, but this beer has not yet been defined.[38]

Trappiste: Ales produced at five Belgian monasteries - Chemay, Orval, Rochefort,

Westmalle, and Westvleteren. They are brewed by monks according to

centuries-old methods.[1] Alcohol content by weight is 5.5 to 7.5

percent.[60]

Weizen: This style of wheat beer is common in southern Germany. It has a low

hop rate, at least 51 percent wheat and a fruity, tart, spicy palate. Its

character is particularly clove like, and distinct from its lactic Berlin cousin. Alcohol content by weight is 4.5 to 5.7 percent [60]

Wheat Also called "white beers," these are made with a concentration of wheat as well as traditional barley malts. Wheat beers are generally tart and frothy with a hint of fruit flavors.[1]

Non-alcoholic beers: Brews made with less than 0.5% alcohol, which is about the same as fresh fruit juice and fulfills the legal definition of non-alcoholic. These brews cannot be legally labeled as beers. Examples are O'Doul, Sharp, and Kingsbury.[68]

APPENDIX B

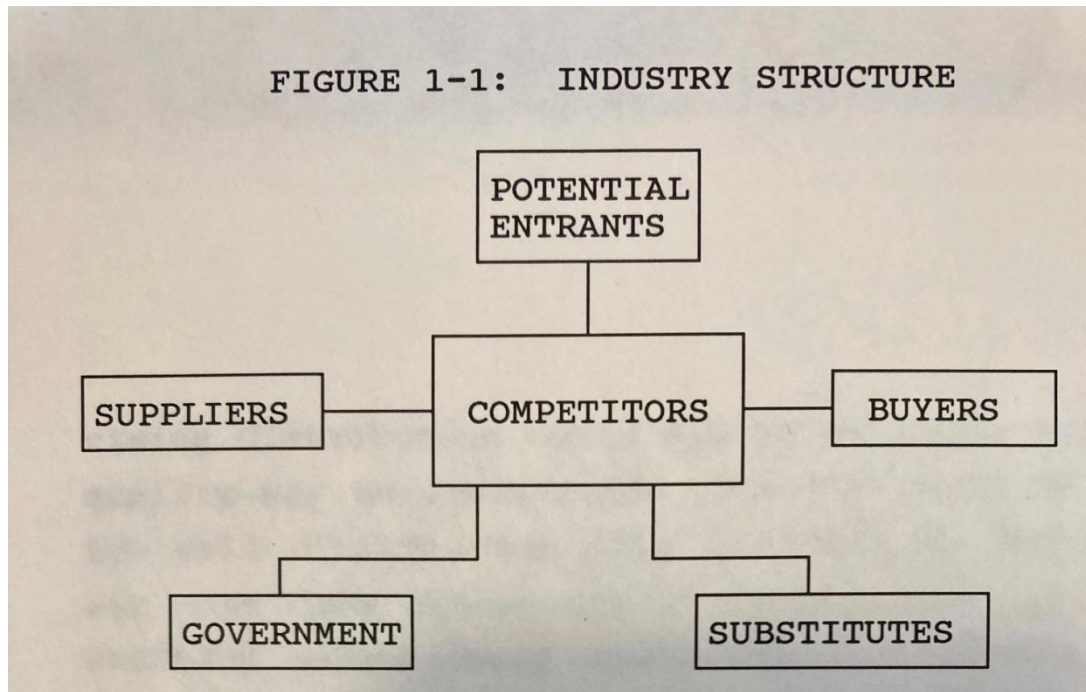
MICROBREW

INDUSTRY ANALYSIS

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- 1.3 Buyers
- 1.4 Substitutes
- 1.5 Government
- 1.6 Suppliers



### 1.0 INDUSTRY ANALYSIS

This industry analysis uses Figure 1-1 as a structural foundation. Only that portion of the industry that will affect a microbrewery in Montgomery County will be included in this analysis.

High price beer accounts for about 10% of all beer consumed, and microbreweries, brewpubs, and regional breweries captured about 4% of this market in 1990. This is up from less than 1% in 1986. In 1990 there were 300 microbreweries and brewpubs in the US compared to 50 in 1986. These microbreweries and brewpubs produced 2.4 million barrels in 1990, up from 64,200 in 1986, and are still growing at a rate of 30% to 50% annually. Table 1.0-I shows the national growth rate of the microbreweries compared to the import beers in the high-end market. [6]

Since beers produced by microbreweries have a shorter shelf life and are associated with an area, the microbreweries that would be competing for customers in Montgomery Country would be located in Maryland, Virginia, Washington DC, and Pennsylvania. In Maryland a brewpub may only sell beer on the premises. Since a microbrewery sells to the consumer through retail or restaurants, the brewpub is not considered a competitor. Table 1.0-II list the address of the microbreweries in this area with a brief description of their specialty. Table 1.0-III lists the brew house size and capacity for the microbreweries in this area along with production in 1989.

**Table 1.0-I. High End Market Growth Rate[65]**

	<u>Imports</u>	<u>Micro-Brewers</u>
1982	31.68%	0.22%
1983	35.38	0.28
1984	39.21	0.38
1985	42.79	0.52
1986	46.79	0.52
1987	49.13	1.15
1988	50.29	1.65
1989	47.73	2.59
1990 (est.)	45.00	4.00

Table 1.0-II. Addresses of Local Microbreweries.[29]

Baltimore Brewing Co 104 Albemarle St. Baltimore, MD 301-837-5000	Serving German-style lagers, including a helles, dunkel, pils and occasional specialty beer.
British Brewing Co. 6579 Bay Meadow Dr. Glen Burnie, MD 301-760-1195	Maryland's first microbrewery; features an English-style "best bitter" ale, as well as limited production of seasonal specialties.
Old Dominion Brewing Co. 44633 Guilford Dr. Ashburn, VA 703-729-2402	First Washington-area microbrewery; its German-style "Dortmunder" beer won bronze medal in '90 Great American Beer Festival.
Wild Goose Brewing Co. 20 Washington St. Cambridge, MD 301-221-1121	First microbrewery on Eastern Shore; producing range of English-style ales from "ordinary" to "best bitter" strength.
Virginia Brewing Co. 1373 London bridge Rd. Virginia Beach, VA 703-569-5874	Area's first microbrewery; producing range of German-style lagers, including perennial award-winning doppelbock.

Table 1.0-III. Local Microbreweries Capacity.[30][60]

<u>Brewer</u>	<u>Brew House</u>	<u>Capacity</u>	<u>'89 Production</u>
Baltimore Brewing Co	17 bbl	4000 bbl	n/a
British Brewing Co.	15 bbl	5000 bbl	1,400 bbl
Old Dominion Brew Co.	26 bbl	6000 bbl	n/a
Wild Goose Brewing Co.	25 bbl	6000 bbl	1,000 bbl
Virginia Brewing Co.	25 bbl	6000 bbl	3,000 bbl

## 1.2 POTENTIAL ENTRANTS

Microbreweries are targeting a select customer in a regional area by promoting increased taste and local character. New entrants 'would consist, of other' beers that. satisfy' the customer quest for taste. This new entrant could be a giant brewery, an import brewery, or another microbrewery.

Because a giant brewery can use their existing equipment to brew a tasty beer, they could have the lowest barrier of entry. A giant brewery would not need to be concerned with licenses or zoning laws within Montgomery County. Their tasty beer would be sold to Montgomery County using the same procedure they currently use to sell their standard brews. The largest barrier a giant brewery would face also prevents them from competing with the microbreweries. Mr William K. Coors, Chairman & Chief Executive Officer of Adolph Coors Company states that, "By 1992, the principals of the major breweries will finally be aware that the true purpose of running a business is to provide the stockholders with a fair return on their investment." [10] "Since 1960, there is no way that America's large breweries, the Big Six, are able to experiment with any new long brewing beer styles, because the market possibilities is small enough were it is economically unfeasible for them, and they can't market large quantities." [61] Therefore, overcoming the investor barrier is too high for a giant brewery to be considered a threat to microbreweries.

Import beers are a threat to microbreweries. The products of microbreweries many times tries to imitate the flavors of imports. But the customers themselves are the barrier. For example "Pittsburgh taxi driver Steve Cable, who switched from Beck's says. "If I can get a local beer that's as good as a German beer, I'll get the local beer,". [6] The import beer distributors are not worried about the spread of microbreweries. "I don't see it becoming that big an segment," says Philip Van Munching of Van Munching & Co. , which imports Heineken and Amstel. "If anything," says Mr. Mazzoni, president of Barton Beers Ltd., importer of Corona, "they broaden the market." [6] When a foreign brewery targets a market in the US, they usually choose the whole nation. Just like the US giant breweries, the foreign breweries cannot afford to target local markets. The loyalty that customers may have for their import beer must be considered with evaluating the distribution area for a microbrewery. But, the correct microbrew could complement the import beers.

The most important new entrant is another microbrewery. This could result from another existing microbrewery expanding its distribution area. The second option `is if another microbrewery establishes itself in the same county.

The distribution areas of microbreweries in the DC metropolitan area could easily overlap. The strength of a microbrewery is in establishing a local following. By expanding too far outside the local area the beer could lose its local magic.[6] Also, a microbrewery runs the risk of rising distribution costs and to maintain a profit at 11095 quality may be sacrificed. The customers of a microbrewery are well educated but like the standard beer drinker, they are also very intolerant of inconsistent quality beer. An existing microbrewery could easily expand into Montgomery County but they could run the risk losing their local magic.

The first microbrewery to enter a county has many barriers to overcome. Once the county and city accepts one microbrewery, the laws and zoning have been changed to accommodate a microbrewery. The second microbrewery would not have to convince the local legislation to change the laws to allow for microbreweries. The second microbrewery also does not have to educate the local public. The second microbrewery has fewer barriers than the first microbrewery. The only way that multiple microbreweries can survive in the same areas is if they target different customers. A well planned advertising ,strategy and distinctive tastes will help the customers to identify with microbreweries in the same area. The DC metropolitan area could easily become saturated with microbreweries. Another barrier for a microbrewery, the first or any number, is the cost to enter into the business. The equipment to start could cost over \$1 million for a 25 bbl brew house, such as Wild Goose. The advertising costs the first year could exceed \$0.5 million. A microbrewery is lucky if it returns a profit in under two years. The Institute for Brewing Studies reports that 10 small brewers closed their doors last year, 1989, and large numbers continue to lose money.[6][60]

### 1.3 Buyers

In Montgomery County a microbrewery cannot sell directly to the public[60]. Therefore the first customer is the wholesale distributors, pubs/ bars/ restaurants, retail outlets, and the county liquor board. The and customer is still the public. Because the microbrewery cannot sell directly to the public, the problem of convincing the public to buy is doubled. Now the microbrewery must convince this retail outlet to buy the product to place it on the shelf so that the customer actually sees the product and can buy it. The microbrewery must also educate the customer to either buy the beer from the retailer or to ask the retailer to provide the beer. This dual consumer makes the advertising strategies expensive and complicated for a microbrewery. If the advertising strategy fails or the public does accept the taste of the beer, then the public wields a lot of power. The public will not buy the beer and the result is that the microbrewery fails to be profitable.

In Montgomery County in 1987, per the U.S. Census Bureau update, there are 238,500 people between the ages of 25-45 that make at least \$40,000. The national average, as reported by Beverage World, indicates that 88 percent of adults in age group 25-45 drink beer in some amounts. The high priced beer market is nationally 10 percent of the beer market for all ages. For the age group 25-45 the high priced beer market is closer to 15 percent. If consumers in Montgomery County follow national averages then there are  $(238,500 \times 88\% \times 15\%)$  31,482 persons in Montgomery County that are interested in drinking microbrews. This does not consider the devoted giant brewery beer drinker that on a whim drinks a microbrew nor does it consider a non-beer drinker that begins to drink only microbrews. The national beer drinker averages 20 gallons of beer a year or twice twelve ounce cans a week. In Maryland the average is 23 gallons annually per person. [60] In Maryland the average consumption of beer is 23 gallons a year[60]. This average would be high for a microbrewer drinker because of the nature of the consumer. A realistic average would be around 10 gallons which equates to one 12 ounce bottle a week. Then in Montgomery County there is a potential of  $(31,482 \times 10 \text{ gallons})$  314,320 gallons for a microbrewery. With Montgomery County's physical close proximity with Washington DC, north Virginia, and south Pennsylvania the actual target market is larger. Commuters could be encouraged to buy a microbrew while commuting out of Montgomery County to their homes [39] [40] [42] [43]

#### 1.4 Substitutes

The substitute products include any liquid that can quench a thirst. These include soft drink, bottled water, and juices. But, a microbrewery is not selling to a customer who just wants to quench a thirst. This customer wants to drink something that has taste, class, quality, and made from natural products not including sugars. This customer drinks a beer for reasons similar to what we are used to understanding about wine. The drink is drunk for the ambience and effect on the palate. Quantity is not an issue, quality is. The true substitute products are other beers that provide similar taste quality. These are made by contract brewers and brewpubs. Table 1.4-I lists the local contract brewers and brewpubs.

Contract brewers do not brew their own beer nor do they own HUY brewing equipment. They usually contract with a regional brewery to produce their formula. Usually the regional brewery is not nearly as local as the contract brewer would lead the customer to believe in their advertising. For example, Pecan Street Beer is not brewed in Austin Texas as the label would imply. The beer is brewed by Shriner Brewery which is a regional brewery based in Shriner Texas and sells in several states.[34]

Brewpubs are usually licensed to only sell their product on the premises. Sisson's in Baltimore is allowed to produce 2,000 barrels a year but it must be served on the premises. [7] Some such as Baltimore Brewing do have a license that allow them to distribute through retailers the same as a microbrewery. In this analysis, a microbrewery such as Baltimore Brewing would be considered either under existing competition or a new entrant depending on if they already distribute within Montgomery County.

Table 1.4-I. Contract Brewers and Brewpubs[29]

Sisson's 36E. Cross St. Baltimore, MD 301-539-2093	Maryland's first brewpub; featuring gold and amber English-style pale ales and wide range of seasonal specialties
Baltimore Brewing 104 Albemarle St. Baltimore, MD 301-837-5000	Baltimore brewpub serving German-style lagers, including a helles, dunkel, pils, and occasional specialty beer
19th Street Brewery 1065 19th St. Virginia Beach, Va 804-491-5000	Area's first brewpub; serving German style helles and marzen beers; features 500-seat festhouse.
Olde Heurich Brewing Co 1111 34th St. NW, Washington, DC 202-333-2313	Area's first contract brewer; German -style marzen always a popular favorite at Great American Beer Festival.

## 1.5 GOVERNMENT

The government effects a microbrewery through laws and taxes. Table 1.5-I lists different contacts within the levels of government.

Liquor restrictions in the United States goes back to the colonial days. At that time the legislative regulations regarding liquor were mainly for revenue and, later, to encourage sobriety among the Indians, the slaves, and finally the working classes. Both for revenue and as a deterrent, a tax was levied on the selling of distilled liquors in 1790. In 1816 the first prohibitory law, forbidding the selling of liquor on Sundays, was passed in Indiana. In 1838 Massachusetts limited the amount of " liquor that one person could buy at a time. In 1846 Maine passed the first statewide prohibition law. On 16 January 1920 the National Prohibition Amendment (the Eighteenth Amendment to the Constitution) became law. This amendment has been estimated to have cost the government over \$1 billion per

year in revenue. It is also estimated that the American people spent a total of \$36 billion for bootleg. On 5 December 1933, the Twenty-first Amendment repealed the Eighteenth Amendment. [55]

Federal control is administered by the Bureau of Alcohol, Tobacco, and Firearms (BATF) a division of the Treasury Department, Wine and Beer Branch. This branch exercises control over the alcoholic beverage industry by protecting the public, ensuring fair trade practices, and collecting revenue. The protection of the public comes by preventing the misbranding of products and the misuse of advertising.

All alcoholic beverage labels must conform to certain regulations and must have BATF approval before being used. Labels must identify the product; the manufacturer; the liquid contents; and the alcohol content. Certain statements are also specifically prohibited, such as those that disparage a competitor's product: those that are false, misleading, indecent, or obscene; or those that use the name of a person or organization to imply that product has been endorsed. There may also not be any consumer deception regarding the age, manufacturing processes, analyses, guarantee, or other irrelevant matters. The certificate of label approval must conform to the last period and comma, with the actual labels on the bottles.

Advertising of any alcoholic beverages must contain much of the same mandatory label information, such as the class and type of the product, and the percentage of alcohol as it appears on the label. The lettering of this information must be clear and legible, and the name and address of the advertiser must be present. There may be no false or misleading assertions, disparagement of a competitor's product, or any other statements that would be prohibited on a label. There may be no medicinal or therapeutic claims that might be misleading. The American flag or other government symbols may not be used to mislead the consumer into thinking that the product has been produced for or supervised by the government.[55]

Maryland also exercises a secondary control. Although some states in these areas have laws allowing brewers to sell their products directly to the consumer, many states still prohibit the concept of microbrewing. Maryland still operates under a three tier system. A microbrewery can produce but they cannot also distribute or sell directly to the consumer. In Maryland a tax of 9 cents per gallon is levied on beer sold by non-resident dealers to wholesalers or by manufacturers or whole sellers to retailers.

The county also exercise some control. Montgomery county controls the sale and distribution of beer within the county.

Table 1.5-I. Contacts in the Government

Regional Bureau of Alcohol, Tobacco and Firearms  
841 Chestnut Building, Third Floor, Suite 380,  
Philadelphia, PA 19107, (115)-597-2246

State Alcohol Beverage Control Agencies  
District of Columbia, Michael Fonseca, Program Manager,  
Alcoholic Beverage Control Board, 614 H St. N. W.,  
Room 807, Washington, DC 2001, 202-727-7375

State Alcohol Beverage Control Agencies, Maryland  
William Pyle, Director, Comptroller of the Treasury,  
Alcohol and Tax Division, Room 310, Goldstein Treasury  
Building, Annapolis, MD 21404, 301-974-3311

State Alcohol Beverage Control Agencies, Virginia  
David Shobe Jr., Chairman, Virginia Department of Alcoholic  
Beverage Control, 2901 Hermitage Rd., Richmond, VA 23220,  
804-367-0605

State Tax Guide - All States  
Published by Commerce Clearing House Incorporated, 4025  
W. Peterson Ave., Chicago, Illinois 60646.

## 1.6 Suppliers

The suppliers provide the natural products used in brewing such as the 'water, barely, 'yeast, hops, and. other' raw material. Suppliers also provide the bottles, labels, and containers for shipping. Both types of suppliers have a great influence over a microbrewery.

The beer produced by microbreweries is sensitive to the quality of the basic raw material. A giant brewery could use chemical additives to compensate for fluctuations in quality, but a microbrewery is prevented because the basic premise is that the ingredients are as natural as possible. Both giants and microbreweries do treat the water. The composition of the water is important. ,Wild Goose brewery treats the city water until the ph is 6.[31] But, even for a giant brewery there is only so much treatment that can be done to the water. Anheuser-Busch suspended production in St. Louis, laying off 2,000 employees because of an oil slick working down the Mississippi River caused by the Shell Oil Company pipeline rupture. Reason for shut down was because the taste of the water slightly altered.[66] The quality of the crop products also influences the microbrewery. A giant brewery can change to quantity mixture of the wide variety of beers that they produce to compensate. The giants can then modify their advertising to concentrate of the type

of beer that is made from the crops that are currently in good quality and in large enough quantities. A microbrewery does not have such flexibility. The variety of beer produced by a microbrewery is limited, usually to two types.

A microbrewery is sensitive to the price of the raw material and of the packaging material. The beer is already being sold at a high price and any increase in raw material costs would be a direct reduction in the profit margin.

A microbrewery must establish a good working relationship with the suppliers. There are many suppliers that already provide to microbreweries. Every year Beverage World publishes an advertising listing of all the manufacturers and suppliers that are connected with the beverage industry. This listing runs into the thousands of pages and is heavily categorized. The beer industry is considered part of the beverage industry.

The following is a list of suppliers that Germantown Brewery is currently establishing contracts with or will buy from. Germantown Brewery believes in maintaining a good relationship with the suppliers.

Coasters: American Coaster Company, 527 Wheatfield Street, PO BOX 610,  
North Tonawanda, NY 14120, 716-693-6540

Labels: Creative Label/Bamse lithographing Company, Incorporated, 7413  
Pulaski Highway, Baltimore, MD 21237, 301-866-4700

Six pack labels: Diversified Packaging Products Incorporated, 1265 Pine Hill  
Drive, Annapolis, MD 21401, 301-974-4411

Chemicals: GAF Corporation, 2407 Park Place, Evanston, Illinois 60201, 800-543-  
1027 -- Beer stabilizer products, surfactants and sanitizers

Bottles: Ownes-Brockway Glass Containers, One Seagate OSG 25, Toledo, Ohio  
43666, 419-247-5000

Wines Incorporated, 1340 Home Avenue, Akron, Ohio 44310, 800-321-  
0315

Kegs: Spartanburg Steel Products, Incorporated, PO Box 6428, 1290 New Cut  
Road, Spartanburg, SC 29304, 803-585-5211

C02: Thermice Corporation, 650 Grove Road, Thorofare, New Jersey 08086, 800-  
523-999

All ingredients: Miracle Feeds Incorporated, 544 North 4th Avenue, Onalaska,  
Wisconsin 54650, 608-783-3337

Crosby & Baker, 999 Main Road, Westport, Massachusetts 02790, 800-992-  
0141

Malt: Briess Malting Company 250 West 57th Street 1020 New York, NY  
10107, 212-247-0780

Froedtert Malt Corporation PO Box 712 Milwaukee, Wisconsin, 53201,  
414-671-1166

A. Gusmer Incorporated, 27 North Avenue E., Cranford, New Jersey 07016,  
201-272-9400

Schreier Malting Company, 704S. 15th Street, Sheboygan, Wisconsin  
53081, 414-458-6126

Specialty Products International, P0 Box 784, Chapel Hill, NC 27514, 919-929-  
4277

Hops: CMA-German Agricultural Marketing Board, 950 Third Ave, 25th Floor,  
New York, NY 10022, 212-753-5900

George Segal Hop Company, 19 Huguenot Drive, Larchmont, NY 10538,  
914-834-4017

Yeast: National Collection of Yeast Cultures, AFRC Institute of Food Research,  
Norwich Laboratory, Colney Lane, Norwich, Norfolk NR4 7UA, England,  
0603-56122

Posters and Displays: Johnson Litho Graphics of Eau Claire, Ltd., 2219 Galloway  
St., Eau Claire, WI 54703, 715-832-3211

Six pack packages: Mead Packaging, P0 box 4417, Atlanta, GA 30302, 404-875-  
2711

## **APPENDIX C**

### **BREWING PROCESS**

The following are excerpts taken from bibliography [12] unless otherwise indicated. Figure 1 is pictorial of the following description.

In brewing beer the only difference is the way the ingredients are treated - how long the malt is dried and roasted, the quantities used, the yeast used, and time and temperature of fermentation.

The first step is the malting procedure which is usually done by a specialist to the breweries specifications. The barley goes to the barley-receiving room, where it is dressed, sieved, or passed over screens so that small and inferior grains will be eliminated. The best grain is then steeped or soaked in water to two days until it is thoroughly softened. It then goes into germinating compartments, where the temperature and moisture levels are controlled, for about three weeks, during which time the grain begins to germinate, or sprout. During the germination process a chemical change occurs in the grain. The enzyme amylase has been produced, and it has the property of converting the balance of the starch into sugars - maltose and dextrin - which are fermentable, whereas the starch in its original state is not. To stop further growth of the sprouts, the malt is placed in a kiln and dried. The temperature and length of time the malt is roasted determine the color and sweetness of the final product. Roasting proceeds until either light, dark, or black malt is produced. The malt is then ground into a meal or grist.

The second step is mashing. The ground malt first goes through a hopper into a mash tun along with the proper amount of hot water. The mix is thoroughly mixed and left to stand or are cooked as long as is necessary to obtain the maximum extraction of soluble materials. It is during this mashing operation that the brewery can determine the composition of the finished beer, for it is the temperature and the -length of time at which the mash is maintained at a given temperature that determines the amount of fermentable and nonfermentable substances the wort will contain.

In the third step the mash is then pumped into a lauter tun. The mixture is then stirred for a predetermined amount of time. What this is called is predigestion. Compounds have been broken down and made digestible; insoluble substances have been made soluble. The solids, which settle on the bottom, for a filter bed. The liquid, which is no wort, flows through this natural filter and passes into the brewing kettle. In order to ensure that every bit of goodness has been obtained from the grain, the solids are sparged (rinsed) with water. This rinse from the sparging is added to the wort.

The forth step is in the kettle. In the kettle, hops are added to the wort, which is then boiled for two to two and a half hours. This accomplishes the following:

1. The wort is sterilized.
2. Some excess water evaporates
3. Certain volatile materials from the hops and malt that are not needed are lost through evaporation.
4. Some of the insoluble substances in the wort are made soluble by the high heat.
5. Because of the small amount of caramelization, a certain amount of darkening of color occurs.

The wort then runs from the kettle through a hop strainer into a fermenting vat for step five. When the hot wort runs through the hop strainer it leaves behind the spent hops. In the fermenting vat the wort is cooled down. The temperature to which the wort is cooled depends on whether the brewer is making beer or ale. In the case of beer, fermentation takes place at a very low temperature - between 37 and 49 degrees Fahrenheit. Ale, on the other hand, is fermented at a higher temperature, between 50 and 70 degrees Fahrenheit. To start the fermentation yeast is added. The secret of the flavor of any beer is the result of the strain of yeast used. The yeast in lager beer settles to the bottom and does its work there during fermentation. Ale yeast has a tendency to stick together, creating more of a surface, and do their work after rising to the top of the liquid. Ale is the result of top fermentation. Beer fermentation takes longer than ale fermentation - eight to eleven days for beer, while five to six days for ale. During fermentation the carbon dioxide gas (CO<sub>2</sub>) that is given off is gathered and stored to be added back later to the beer. After the fermentation process, the beer proceeds to step six.

In step six, after the principal fermentation is over and most of the yeast has settled down, the young beer is run off into glass-lined or otherwise protected storage vats, where it is kept at a very low temperature, close to the freezing point, so that the yeast and other solids that would give it a cloudy appearance may precipitate by the natural process of sedimentation. Sometimes beechwood chips are added to attract the impurities and promote clarification. During this rest period, a slow, secondary fermentation takes place that develops the immature beer and increases carbonation. The beer throws off its roughness and, as it matures, it becomes mellower and more pleasing. This the lagering, and it usually takes from two weeks to two months.

In step seven the carbon dioxide gas that was released by the wort during fermentation is added back in. Once the beer is carbonated it is refrigerated, it may be centrifuged, and it is then filtered. Beer cannot be kept or stored in direct contact with wood, as it will take on an unpleasant woody flavor. Previously, barrels made from wood were lined with pitch, which was tasteless, did not

dissolve in the beer, and kept it from touching the wood. The beer is now ready for the last step, packaging.

### THE FINISHED PRODUCT

Beers contain:

Water 85 to 90% by weight

Alcohol 3.2 to 8% by weight

Carbohydrates (sugars) 3 to 6% by weight

Protein 0.3 to 0.5% by weight

Calories 10 to 17 per ounce

Chemical composition of a popular import beer[11].

acetic acid, isobutoxy- methyl ester

aniline, 5-chloro-2-/hexadecyl- oxy/-,

butyric acid, 2-/2-/3-acetamido- 2,4,6-triiodophenoxy/ethoxy/-

butyrolactone, 2-carboxy-4-propyl-, ethyl ester

cholic acid, methyl ester, 3,7-di- acetate

citric acid, tripentyl ester

ethanol, 2-/octadecylsulfinyl/-,

ethanol, 2-/octadecylthio/-,

ethanol, 2-butoxy-, phosphate /3 to 1/ ester 1

flavone, 3, 3\*\* -/trimethylenedioxy/- bit/4\*, 7-dimethoxy-,

furfural, 5-hydroxymethyl-

glutamic acid, L-, N-carboxy-, N-benzyl 5-phenyl ester

glutaric acid, 3-/2-hydroxy- p-tolyl/-,

glycerol, 1-laurate

heneicosane

hydantoin, 5,5-diphenyl-e-/hydrocy- methyl/-, valerate /ester/

isobutyric acid

lactic acid, ethyl ester, L- /plus/-,

laurin, 1-mono,

lumazine, 1-meth 1-6-/D-arabo- 1,2,3,4-tetrahydroxybutyl/-,

malonic acid, /3-/diethylamino/- Propyl/-, diethyle ester

malonic acid, teert-pentyle-, diethyle ester

nonanoic acid, 4-hydroxy-, G-lactone

p-benzoquinone, 2-ethoxy-,

p-cresol, 2-methoxy-,

p-methane-2, 9-dithiol

pentanoic acid, 4-hydroxy-, G-lactgne

phenol, 3,4-dimethoxy-,

phenol, 3,4-dimethoxy-,  
 phenol, 4,4pr-cyclopentylidenedi,  
 phenol, p-dodecyl-,  
 phosphoric acid, tris/2-butoxy- ethyl/ester  
 phthalic acid, bis/ 2-ethylhexyl/ester  
 piperazine, 1,4-dihexadecyl-, 1,4-dioxide \_ \_  
 piperazine, 1-hexadecyl-4-methyl-, 1,4-dioxide, dlhYdrate  
 propionic acid, 2-methyl-,  
 propionic acid, cholesteryl ester  
 pyrimidinedione, 2,4/1H, 3H/-, 3-allyl-1-methyl-I  
 tryptophol  
 valeric acid, 2-hydroxy-4-methyl-, ethyl ester  
 valeric acid, 2-oxo-  
 valeric acid, 4-hydroxy-, G-lactone  
 valeric acid, 5-bromo-, ethyle ester

## INGREDIENTS

### WATER

The quality of the water is most important, not only because it forms 85 to 90 percent of the finished beer, but because it is used in every step of the brewing operation and has a great deal to do with the character of the beer. This explains why the great brewing centers of the world developed around suitable sources of water. Furthermore, water that was good for ale may not be good for lagers. Most water used for brewing today can have their pH adjusted with either calcium carbonate or citric acid, followed by filtration. Since water can be analyzed and then corrected in this manner, finding the "ideal" source is no longer as important as it once was.

### YEAST

This fermenting agent converts wort into beer. This unicellular, microscopic plant is protected more carefully in a brewery than any other ingredient, for once the particular strain has been selected it must not be changed or the character of the beer changes with it. It is not merely that the yeast causes the sugars to become alcohol - another yeast would do that - but it performs other functions that probably influence the character of the beer more than the alcohol does. It is these secondary products of fermentation that vary with the types of yeast. The yeast for lager-type beer is *Saccharomyces Carlsbergensis*, named for the place where it was discovered. Ale yeast is *Saccharomyces cerevisiae*, the same kind that is used for bread.

## MALT

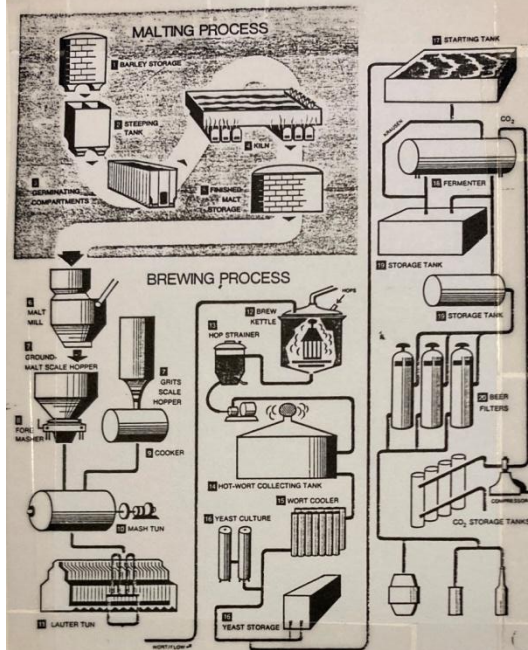
As a general rule the breweries do not do their own malting but buy malt from specialists, although the manner in which the malt is treated is specified by the brewery when ordering. The exact amount of kilning and the degree to which the barley is roasted are important in obtaining the amount of dryness or sweetness of the final beer or ale and in whether it will be a light or dark beer .

## HOPS

Hops come from Czechoslovakia, Germany, and England, and each has different characteristics. In the United States, hops are grown in California, Oregon, Washington, and Idaho. Some American brewers use both domestic and imported hops. Only the flower of the female hop vine is used, which is like a small pine cone with very soft petals. It must be picked at just the right time, as under- or over- ripeness is detrimental to the brew. The hop is picked free of leaves and stems and is dried carefully to conserve the delicate, fine aroma essential to choice brewing. At the breweries the hops are stored in clean, air- conditioned cold-storage chambers at a temperature of 35 to 40 degrees Fahrenheit.

Rather than simply judging hops by their appearance hops are chemically analyzed to determine the exact amount of humulone and lupulin (alpha and beta resins, respectively) they contain, because of the flavor these resins impart. Bitterness oils are measured in International Bitterness Units. Hops also provide an antiseptic actions that prevents the development of wild bacteria, which might contaminate the wort.

Figure 1. Processing Flow



1. Barley grain is cleaned, graded, and stored before start of malting process.
2. Barley is soaked (steeped) in warm water to soften the grain.
3. Softened barley remains in scientifically humidity- and temperature-controlled compartments where it germinates.
4. The germinated barley, now green malt, is placed in kilns where it is dried out with heated air.
5. After kilning, the malt is cleaned and stored for aging.
6. Malted malt is ground into a meal.
7. Ground malt and corn grits, in proper proportion.
8. and 9. Separately, the malt and the corn grits are mixed with hot water and cooked briefly.
10. The mashing or starch liquefaction and conversion to maltose and dextrin. The liquid is now wort.
11. The wort is filtered through the lauter tun, which separates the wort from the grain solids, which in turn are processed for cattle feed.
12. The filtered wort is flavored with hops in the brew kettle, where it is boiled for several hours.
13. Spent hops are separated from the wort when the brew kettle is emptied.
14. Wort cools in wort-collecting tank.
15. Refrigerated wort cooler.
16. Pure yeast culture is added to the wort.
17. The wort remains in the starting tank only long enough for fermentation to begin.
18. Now beer, it is filled into the fermenters, where the process takes seven days. The CO<sub>2</sub> produced is gathered, compressed, and stored, to be added back to the beer later.
19. The new beer is put into storage tanks. Some young, unfermented (kräusen) beer is added, under pressure, to give the beer its zest.
20. After several months at low-temperature storage, the mellowed beer is filtered, has a small amount of CO<sub>2</sub> added, and is kegged, bottled, or canned.

## APPENDIX D

### MARKETING STRATEGIES

A wise man once said, "The person who saves money by not advertising is like the man who stops the clock to save time." In today's fast-paced businesses have to use advertising to make consumers aware of their products. [54] The important questions to ask when selecting an advertising strategy are:

1. What media is the best?
2. How important is creativity?
3. Is there a way to buy space and time that will stretch the advertising budget?

There are several medias for advertising. Medias include newspapers, radio, television, magazines, and specialty publications. Each media is addressed with special attention to its applicability to a microbrewery's needs.

Almost every home in the United States receives a newspaper. People expect advertising in newspapers and many people but the paper just to read the ads. Unlike advertising on TV or radio, a newspaper ad can contain details, such as prices and telephone number or coupons. The difficulty with newspapers is that the ad has to compete with other ads for the reader's attention. The print quality can also be a hindrance especially for photographs. The idea is to keep the artwork simple and stay with line draw for best results. The main advantage for a business on a tight budget is that the business can place a series of small ads, without making a sacrifice. Using the Expanded Standard Advertising Unit System a 3 columns across and 7 inches down would be a 21 inch ad. The inch rate for the Germantown Gazette is about \$35 therefore the ad would cost \$735. [54]

The radio is a relatively inexpensive way of reaching people. The radio can be used to complement a newspaper ad, Station personalities have a good rapport with their listeners therefore if a radio personality announces your commercial, it's almost an implied endorsement. The problem with radio is that there are so many stations and the consumer only listens during certain hours of the day. The best time for a microbrewery to advertising is during commuting hours. This happens to be the prime time to advertise on the radio, so the rate reflect this. The types of radio stations that will reach the consumer include those broadcasting easy listening, news, educational/political talk shows, and jazz. Radio's listening audience increases during the spring and summer months. A 30 second or 60 second slot can cost from \$30 to \$100 dollars. The best strategy to use in radio advertising is to bunch the commercials and air them on Thursday and Friday during rush hours. Several times during one rush hour would optimize the results. This way the consumer has the name of the microbrew on their mind when they purchase their alcohol allowance for the weekend.

Although beer commercials are not banned from television, it is not a good idea to advertise on either the broadcasting or cable channels. The current trend in public opinion is negative towards alcohol advertising on television. Even the giant breweries have toned down their advertising and reduced the numbers. The giants have started using indirect advertising by sponsoring events that - oh by the way - have their name plastered all over the landscape and participants. The consumer that buys microbrews would not be watching TV nearly as random as the average viewer. This type of consumer would watch TV at predetermined times so that they may watch only shows that interest them. Instead, the microbrew consumer spends many free hours reading trade, news, and hobby magazines.

Since a microbrew can only be sold in a small geographical area, the best magazines to advertise in are those that have readers in the same geographical area. To optimize on advertising expenditures, national magazines that have local advertising options are the best, for example Business Week, Fortune, Newsweek, Time, and TV Guide. Other magazines that cover the hobbies of a microbrew consumer would also be good candidates. For example: golf, health, home decorating, investment, financial, sciences, skiing, sports requiring large investments to participate in (racquetball, sailing, polo) and travel. To capture the real serious microbrew consumer the best place is in local magazines/newspaper whose subject matter is beer. For example: For example, BarleyCorn, BURP, and Beer Enthusiast.[34][54]

Another advertising method that microbreweries can use is through the selling of miscellaneous items. Selling coasters, sweatshirts, t-shirts, sun visors, bottle openers, and posters all with the microbreweries logo can be a form of advertising. Some variation of these options is being used by Wild Goose Brewery, Baltimore Brewery and Sisson's.[34] As long as the artwork on the objects is in good taste the consumer has been willing to pay to wear or display advertising without a commission.

The following is a list of some advertising strategies other microbreweries are using.

Pennsylvania Brewing Co in Pittsburgh produces 8,000 barrels of beer annually in 1990. Advertising slogan is The Bear that Beats the Imports."[6]

In Seattle, where microbrewers have 2% of the entire market and 40% of the high end, Redhook Ale Brewery Inc's Ballard Bitter has the motto "Ya sure, ya betcha," targeting the city's Scandinavian community. The brewery, which predicts \$4 million in revenue in 1990, up from \$488,000 in 1985, also makes

a Red Hook Extra Special Bitter, a lighter beer aimed at customers along the Pacific Coast.[6]

Boston's Mass Bay Brewing Co. , which has become the largest brewer in the state, targets the home crowd with invitations for brewery tours and a picture of a whaler on the label of its beer, Horpoon Ale. The brewery weans locals off the imports by toting freshness. "These are perishable products," says founder Richard Doyle, "It's not Motor Oil." [6]

Importers stick with national advertising, giving microbrewers a chance to distinguish themselves by tailoring marketing to local tastes. "The closest we get to local advertising is calling it 'New Mexico's No. 1 import, '" says Mike Mazzoni, president of Barton Beers Ltd. , which imports Corona. [6]

Trappist brewery (located with Trappist Monasteries) in Belgium have avoided flooding the market, thus preserving rarity value. For another, their distinctive brews are in tune with today's beer drinkers, who tend to drink less but demand more novelty. "people are getting sick and tired of all these beers that taste the same," says Michael Tassin, a Belgian who imports Chimay into the US, where a 750- milliliter bottle, sealed with a champagne-style cork, sells in stores for as much as \$9.50 a bottle. [9]

In his film "Do the Right Thing," Brooklyn booster Spike Lee used the beer as a prop in a Korean grocer's cooler. (Brooklyn beer) [3]

Virginia Brewing advertises on a few metropolitan Washington radio stations instead of during nationally-televised football games, makes his beer competitive by stressing its differences. [8] Virginia Brewing is targeting imported beer drinkers as customers. Among the places supplied with special beers produced by the company are the trendy Clyde's of Georgetown, union Street Public house and Hard Time; restaurants in the District of Columbia and Northern Virginia. [8]

## APPENDIX E

### EQUIPMENT AND COST

Table I lists the large equipment that is needed for a microbrewery. This equipment if bought has a turn-key system can cost from \$100,000 for a 10 bbl system to \$1 million for a 'top of the line quality' 25 bbl system. [31][34][60] Table II lists some additional equipment that will be needed. This additional equipment could easily add another \$3,000 to \$10,000.[52] Table III lists the amount of supplies a 25 bbl brewhouse will consume in one year if production was 5,000 bbls. This table also contains the per unit price of the supplies and the prorated usage and total cost for the first year of a new microbrewery that can only expect to product 1,000 bbl in the first. year; This estimate is about \$26,537 the first year At 25 bbl brewhouse occupies about 2,500 square feet. The leasing or purchase of this amount of space must be added onto the cost of the microbrewery.

Table IV lists some companies that provide turn-key microbreweries.

The most important step in designing a brewhouse is selecting the equipment. There are almost as many options for purchasing equipment as there are microbreweries. The range encompasses everything from designing and fabricating your own system to purchasing a turnkey brewhouse. Buying tanks from another industry, such as dairy, and converting them into brewing vessels is still common. The availability of used equipment is increasing as breweries purchase new and bigger vessels, putting their smaller ones up for sale. There are also, sadly, a few brewhouses for purchase as a result of the failure of a microbrewery or brewpub.

When choosing equipment, it is very important to know the style of beer you plan to make and the amount you expect to sell over the next few years. Your building also is a factor in what kind of equipment will be most efficient for your space.

Table I. Equipment for a Microbrewery [57]

Shed or room for grain storage	Brew Kettle
Steeping tank	Hop strainer
Germinating tanks	Hot-wort tank
Kiln	Wort cooler
Malt storage tank	Yeast culture containers
Malt Mill	Fermenter starting tank
Malt grinder	Fermenter
Masher	Storage tank for fermenting
Cooker	Beer filters
Mash tun	Compressor
Lauter tun	

Table II. Additional Equipment for a Microbrewery.[52]

First aid kit	Immersion oil
Ladder	Glass slides
Disposable dust masks and ear plugs for grain milling	Cover slips
Shovel and/or hoe	Stainless steel, flat-bottom scoop
Wheelbarrels	Hydrometers 0-8 degree Plato and 8- 16 degree Plato
CO2 regulators and pressure hose	Test kit for measuring calcium, magnesium, and total brewing water hardness.
Oxygen flow meter	Stainless steel sponges
Heavy duty 3/4-inch washdown hose	1000-ml stainless steel, graduated measuring cup
Scale or balance 0-10 kg capacity	House and push brooms with dust pan
Scale or balance with 100-lb capacity	Safety goggles
Tool box ~	Heavy duty rubber boots
Clock or timer	Elbow length gloves p
Water-resistant trouble light with extension cord	Loose-fitting waterproof overalls or apron
Propane torch	Plastic buckets
Bunging hammer	Plastic spray bottle
Stainless steel pails with lids	Long handled scrub brush
One foot-long stainless steel spoon	Floor scrubber with handle
Land-handled, stainless steel dipper	
Stainless steel paddle	
Microscope 40X to 1000X	

Table III. Quantity and Cost of Supplies

<u>Supply</u>	<u>Quantity</u> <u>5,000 bbls</u>	<u>Quantity</u> <u>1,000 bbls</u>	<u>Cost/</u> <u>Unit</u>	<u>First year</u> <u>Expense</u>
Malt	275,870 lbs	55,172lbs	10.00/50lb	11,034
Hops	2,450 lbs	490lbs	23.00/50lb	1,153
Yeast	6,545 lbs	1,309lbs	400.00*	400
Water	75,000 bbls	15,000bbls	30.00/1,000 gallons	13,950
Total				\$26,537

\* one time cost because yeast can be used again. It also grows.

## Table IV. Companies That Provide Turn-Key Microbreweries

Peter Austin & Partners, 20 Washington St., Cambridge, MD, 1613, 301-221-1121

P.T. Bachmann & Son Incorporated, 724 W. McKinley, Milwaukee, Wisconsin 53205, 414-271-6808

BRB Equipment Company Incorporated, 5189 N. 69th St., Milwaukee, Wisconsin 53218, 414-527-4200

Brewing Systems Incorporated, P0 Box 22269, St. Petersburg, FL, 33742, 813-578-0090

Enetab Incorporated, 4955 Spring Grove Avenue, Cincinnati, Ohio, 45232, 513-641-0500

Mangel, Scheuermann and Oeters Incorporated, 1957 Pioneer Rd., Building B, Huntingdon Valley, Pennsylvania 19006-2503, 215-674-5500

## APPENDIX F

### FINANCING OPTIONS

Financing a microbrewery can be difficult. A bank will only give loans of any large quantity if the loan is secured with collateral. The Small Business Association will not lend money for restaurants or microbreweries. Small Business Association (SBA) guarantees do not exist unless you have the collateral to guarantee the SBA guarantee. Government grants are not currently awarded to private businesses producing alcoholic beverages. Corporate grants are generally for businesses wishing to develop a product in the same field. Both Bill Owens, of Buffalo Bill's Brewery which also provides turn-key systems with consulting, and Alan Pugsly, Wild Goose Brewery which also provides turn-key systems with consulting services, recommend that the financing come from friends, family, and acquaintances. [69] [31]

By involving friends, family, and acquaintances the business usually then becomes a limited partnership or syndication. This is the most popular method of financing microbreweries today. Limited partnership often allows the owner to use equity instead of debt financing, which puts less financial stress on the microbrewery. During the first two years a microbrewery will not be profitable and having to make debt payments could be more of a burden than the business can handle. The bad side of partnerships is that it dilutes ownership, which therefore reduces the owner's returns. [45]

## APPENDIX G

## RESEARCH

Specialty Magazines

American Brewer, Publisher Bill JK;Owens, Buffalo B111 s Brewery 1082B Street, Hayward, CA 94541. 415-538-9500.

Beer Statistics News, Jerry Steinman, Publisher, 51 Virginia Ave., West Nyack, New York 10994, 914-358-7751

Brewer's Digest, Siebel Publishing Co., Division of Ammark Publishing Co., 4049 W. Peterson Ave., Chicago, Illinois 60646, 312-463-3400

zymurgy, Charlie Papazian, Editor, American Homewbrewers Association, P0 Box 287, Boulder, CO 80306-0287, 303-447 -0816.

New Brewer Magazine, Institute for Brewing Studies, Dept AB. P.0 Box 287, Boulder CO 80306, 303-447-0816

Beer Marketer's Insights, Beer Marketer's 51 Virginia Ave. W. Nyack, NY 10094

The Northwest Beer Journal, 2626 Lodgepole Drive SE, Port orchard, WA 98366, 208-871-1692

Beverage World, 150 Great Neck Road, Great Neck, NY 11021, 516 -829-9210

All About Beer, 2145 W. LaPalma Ave, Anaheim CA 92801, 7614-635 -9040.

Spirit, The magazine of Southwest Airlines

Brewers Bulletin, Marge Collins, Editor, Publisher, 205-B Dean Street or P0 Box 906, Woodstock, IL 60098, 815-338-9330.

General Magazines

Entrepreneur, 1990

Newsweek, 1989-90

The New Yorker, 1990

Esquire, 1990

Business Week, 1990

Time, 1987-1990

Facts on File, 1989-90  
Black Enterprise, 1989-90  
Marketing, 1990  
Advertizing Age, 1990

Specialty Newspapers

Barley Corn, 8139 Heatherton Lane, Suite #202, Vienna, VA 22180, 703-573-8970

Goose News, Wild Goose Brewery, Cambrdige, MD

General Newspapers

The Washington Post  
The Wallstreet Journal  
The New York Times

Specialty Publications

Beverage World 1990/91, 150 Great Neck Road, Breat Neck, NY 11021, 516-829-9210.

General Publications

Chamber of Commerce Gaithersburg, 9 Park Ave, Gaithersburg, MD 20877, 840-1400

Chamber of Commerce Montgomery County, 416 Hungerford Dr. Suite 400, Rockville MD 20850, 301-424-6000

MD Business Almanac '87 by Baltimore Sun

1990-01 Almanc of Consumer Markets

Ulrich's International Periodicals Directory 1990/91.

Maryland Directory of Maryland Manufacturers, 1987-88.

Specialty Agencies

Small Brewer's Association of Brewer's, 303-447-0816, Bolder Colorado.  
See interview with Dave Edgar, Assistant Director of Institute of Brewing Studies.

Small Business Administration, P.O. Box 15434, Fort Worth TX 76119. 1-800-368-5855

Government Agencies

Business Licenses from Alcohol & Tobacco Tax Division, Comptroller of the Treasury, 301-269-3316.

Maryland Business Assistance Center, 45 Calvert Street, Annapolix, MD 21401, 1-800-OK-GREEN.

INTERVIEWS /

Dave Edgar, Assitant Director of Institute of Brewing Studies, Colder Colorado. Date: 16 January 1990 over the telephone

Alan Pugsly, Brew Master at Wild Goose Brewing in Cambridge MD. Date: 12 February 1990 at brewery in Cambridge MD.

Dave Tucker, President of Pecan Street Brewing in Austin TX. Date: 26 December 1989 at Pecan Street Brewery warehouse.

Bill Ownes, Publisher, Editor of American Brewer Magazine 1n California and Owner of Buffalo Bill's Brewery, Hayward, CA Date: 3 January 1990 over the telephone

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## APPENDIX I

## PROPOSAL

## PROPOSAL AGREEMENT

Feasibility Study  
for a  
Micro Beer Brewery  
in  
Montgomery Country, Maryland  
using an  
old family recipe.

Prepared by Tina von Schweinitz

The whole time I lived at home there was always a batch of beer brewing in the kitchen. Even now my parents are brewing a batch for a Christmas party. Through the years our family beer has grown in reputation. Many friends have expressed an interest in purchasing the beer. But, because my father doesn't have a license to sell, the beer can neither be sold nor can it be consumed off of my father's property. Even I cannot take a bottle home to drink in my own house.

I would like to continue the family tradition of brewing beer by starting a Micro Brewery. The beer would be made using the old family recipe. This Brewery would be operating in Montgomery County, Maryland first with future options to expand across state boundaries. The first step before starting this venture would be to conduct a feasibility study.

The first objective of this feasibility study is to determine if Montgomery County customers can support another Micro Brewery. The second objective is to determine if the beer produced from the old family recipe is the type of beer that consumers want to drink.

To meet the objectives this study would include the following analysis:

### Customer Base Analysis

- Income
- Age
- Job patterns
- etc

### Demographics Analysis

- Population composition
- Location of other Micro Breweries
- Location of resale/retail business

- Location of this Micro Brewery
- etc

#### Industry Analysis

- Competitors
- Buyers
- Substitutes
- Suppliers
- Regulation/Laws/Licenses
- etc

#### Financial Analysis

- Capital costs
- Operating cost study
- Market price
- Overhead cost
- Breakeven Analysis
- etc

#### Receipt Analysis

- Changes due to large quantity
- Changes due to selling to public
- Taste versus customer expectations
- etc

#### Marketing Strategy Analysis

- Advertising
- Distribution '
- Wholesale/retail/public
- etc

My research would begin in the libraries, mostly to get a feel for what questions to ask. From the Small Business Bureau or equivalent I would find the locations of other Micro Breweries in Montgomery County. The major portion of this feasibility analysis would be based on interviews of owners of a few of these Micro Breweries. Some of the many question I plan to ask would define the customers. From the Census Bureau I would get a breakdown of the population composition of Montgomery County. I would also ask questions on where to buy supplies. The prices charged by these supply place will be the bases for the financial analysis. I would ask more questions concerning the laws and distribution. If I am lucky, Micro Breweries have been around long enough that support organizations and publications are available.

This feasibility study should be evaluated based on how well each analysis fulfills the objectives. There is not enough time in one semester to begin a business. Therefore the validity of the conclusions in each analysis can not be adequately judged. But if each analysis is based on facts or experience from operating Micro Breweries that support the conclusion then the conclusion should be valid.