BUSINESS PLANNING FOR A CRAFT BREWERY IN NORTHWESTERN BRITISH COLUMBIA

by

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Executive Summary

The goal of this project was to present a best-fit scenario for a craft brewery in northwest British Columbia (BC) and evaluate its potential profitability. A business plan template was used to evaluate the factors that may impact the potential success of such a venture. The research for this project collected information from a number of sources. Sales and production data was gathered from the provincially regulated Liquor Distribution Branch. Fixed asset equipment costs were gathered from leading industry suppliers and financial data on breweries operating in British Columbia was gathered from Industry Canada's Small and Medium Enterprise Benchmarking tool. Interviews with industry experts were also conducted to gain insight and validate this report with real life experiences. This project determined that it is possible for a small craft brewery to be profitable in northern BC. This is based on the tax returns of the majority of breweries operating in the province which were calibrated to market conditions in northwestern BC, forecasted revenues and known fixed asset investment costs.

The outcomes of this project reveal that the market for craft beer in northern BC is small and is overshadowed by markets in southern BC and Vancouver Island where the majority of craft beer is made and sold. The northern portion of the province has only one mature brewery, which leaves room for new firms to enter the industry. While this may seem attractive, regulatory policies of the provincial government combined with high capital investment and significant brewing know-how are key barriers for starting a craft brewery. This may be partially attributable to why at least a third of all breweries in BC are not profitable. Overcoming these challenges is possible, but it is crucial that sufficient financial planning is undertaken. Investigation conducted as part of this project revealed that the

majority of breweries in the province have financed their operations through significant levels of debt and posses negative equity. This financing strategy is inherently risky and subjects these businesses to elevated probability of bankruptcy due to unforeseen disruptions. For a craft brewery in northwest BC, it is highly recommended that equity financing be pursued to overcome this challenge, despite the drawbacks of diluted business ownership that results from such an approach.

Table of Contents

List of Tables

List of Figures

List of Appendix Tables

List of Appendix Figures

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1.0 Introduction

1.1 Purpose and Objectives

The craft beer industry in BC is booming. New businesses are entering the industry and established ones are expanding. Competition amongst firms has increased and quality and product innovation is providing consumers with increased variety and novel tastes. For individuals with a passion for the complexities of making beer, to connoisseurs, and to those who would love to turn their beer passion into profits, this is an exciting time. It is hoped that this project will be an equally exciting read and will spur creative thinking amongst business minded individuals to develop local beer in a region with little home grown product.

The goal of this project is to present a best-fit scenario for a craft brewery in northwest BC and evaluate its potential profitability. To achieve this goal, contemporary elements of a business plan will be used to evaluate the merits of such a business and its odds of financial success. To this end, this project possesses aspects of both a feasibility study and a traditional business plan. To ensure this project provides tangible results, the elements of a typical business plan are discussed in this report, complemented by real-life requirements to acquire a brewery manufacturer's license[1] in BC. This combination of factors includes:

- A description of the proposed operation
- An industry analysis, marketing analysis
- Operational considerations including required manufacturing equipment and its cost
- A financial analysis including financial statements outlining production and sales forecasts for a three year period
- A statement of assets and liabilities

[1] See http://www.pssg.gov.bc.ca/lclb/docs-forms/LCLB014.pdf

- A source and use of funds statement

This project will be successful if it provides readers with a broad overview of the beer industry to establish context, followed by investigation of how a new craft brewery in northwest BC may enter the industry, what is takes to make and sell beer, and financial aspects the owners of such a venture should consider. It is hoped the information presented in this report will be interesting to the general public and provide entrepreneurs a basis for launching their own craft brewery in northwestern BC.

1.2 Rationale for this Study

This project is important for several reasons. Northern BC suffers from a lack of economic diversification and relies heavily upon primary producing industries such as forestry, mining, agriculture (Canadian Northern Economic Development Agency, 2013). It is widely recognized that a strong need exists to establish new industries that support sustainable communities, a secure employment base and build upon Canada's capital of abundant natural resources.

Manufacturing beer in northern BC is a timely consideration given the growing demand for an increased variety of high quality beer among consumers; a trend which is demonstrated by the rapid escalation in craft brewery start ups in southern BC (Gierasimczuk & Parry, 2013). Finding out whether a brewery is a viable business pursuit in northern BC is a critical step for potential entrepreneurs and investors interested in advancing such a venture.

Establishing a brewery in northwestern BC has other benefits too. As Bowles (2013) points out "small and mid-sized breweries pay taxes in their local jurisdictions and provide employment…From a tax, investment and employment perspective, therefore, locally-based breweries are important" (p. 5). Dr. Bowles also mentions that "breweries provide an increased range of goods to consumers, a desirable goal in itself, but also important for tourism where local goods, including beer, may be supportive of the tourist industry" (p. 6).

By investigating the potential viability of a craft brewery in northwest BC, this project will provide insight for communities and investors regarding whether this is a business worth pursuing. This study may also provoke further thinking on how to overcome barriers to facilitate the expansion of the beer manufacturing industry in northwestern BC.

2.0 Methodology

This project has relied on three main sources of data, including business planning literature, industry data and expert interviews.

The use of business planning literature in this report has focused on applying proven principles to assess the potential for a craft brewery in northwest BC. Common aspects of business plans have been researched and used to compose the various sections presented in this report. Furthermore, business plan requirements of provincial regulators at the Liquor Distribution Branch have also been included to support the applied research conducted for this project.

Due to the heavily regulated market for alcohol sales in British Columbia, significant information exists on sales and production of beer. This information was extensively relied upon for the marketing section of this report, in addition to data from industry associations (e.g. Beer Canada). Financial information for this project was gathered from a diversity of sources. In some cases, manufacturers and suppliers quotes were used. In other cases, financial information from Industry Canada's SME Benchmarking tool was used.

The research for this report also relied upon interviews with experts in the craft beer industry. This information was considered necessary to validate the other sources of data used in this report, and to provide a real life context for this project.

3.0 Results

The following section of this paper presents the research findings of this project. This information is presented according to components typically found in a business plan, including product offered, market analysis, competition analysis, business environment overview, business level strategy, operations plan and financial data (James, 2010; Small Business BC, 2010). Business planning information required by the Liquor Control and Licensing Branch to manufacture beer in BC is also presented.

The following sections are intended to logically progress through important considerations facing entrepreneurs interested in starting up a craft brewery in northwestern BC. All attempts have been made to focus this research in an applied manner to provide recommendations that would support a successful brewery. It is important to note, however, that some decisions are not addressed by this project. For example, a specific community is not recommended where a craft brewery should operate. This was deemed the best approach as it allows the merits of more than one community to be considered as part of the business planning process discussed in this report.

3.1 Product and Service

3.1.1 *Defining a Craft Brewery*

There is no standard definition to define the term craft brewery, aside from the distinction that it makes craft beer. Generally, it refers to a brewery that manufactures beer in small batches which embraces developing new tastes using novel ingredients. Often, the terms microbrewery and craft brewery are used synonymously. A key defining feature of a craft brewery is that it is not a large format brewery. The growth in craft breweries over the past twenty five years stems from the desire for an increased variety of beer tastes amongst consumers that was not being offered by larger manufacturers.

As craft breweries are known for developing beer in small batches, annual production volume is an indicator that is typically used to identify this type of business. In BC, there are three thresholds identified by the Liquor Distribution Branch, the provincial government entity responsible for the beverage alcohol industry. These thresholds range from breweries which produce less than 15,000 hectolires (hL)[2], those that produce between 15,000 and 160,000 hL and breweries with greater than 160,000 hL in output (Table 1). For the purposes of this project, the business planning considerations discussed in the following sections will apply a brewery with less than 15,000 hL in annual production.

3.1.2 *Recommended Offering of Products and Services*

The type of beer commonly varies between two main types; ales and lagers. These styles of beer vary in their taste and production requirements. While lagers are known for their easy drinking flavor, ales have been demonstrated to be closely linked to consumers with acquired taste (McAuley & Leskovec, 2013). The preference of discerning beer drinkers toward ales over lagers is reflected annually at the BC Beer Awards[3], which celebrates popular craft beer made in BC. In 2013, fifteen of the seventeen categories in this event featured ale styles of beer. Not surprisingly, craft breweries recognize the popularity of this beer type amongst consumers and focus their operations to primarily produce this

[2] One hectoliter is equal to 100 litres
[3] See http://bcbeerawards.com/

product. For example, Plan B Brewing, a craft brewery that operated in northwest BC sold exclusively ale beer.

Despite the popularity of ales among craft drinkers, the majority of beer sold in northern BC is lager, a trend that also occurs throughout Canada and the United States[4]. This is supported by recent research which indicates "premium beer was the…most lucrative in the Canadian beer market in 2011 with total sales of $4,519.5 million, equivalent to 37.5% of the market's overall value. In comparison, sales of standard lager had a value of $4,314.3 million in 2011, equating to 35.8% of the market total" (Marketline, 2013, p. 7). Together, these two categories of lager represent three quarters of all beer sold in Canada. In northern BC the preference for lager is evidenced by the volume of lagers to ales on the floor of most retail establishments. It was also verified by a Government Liquor Store manager in northwest BC who desired to remain anonymous.

Recognizing the importance of lagers, and to attract consumers and facilitate brand switching (at least occasionally), a new craft brewery in northwest BC should recognize the popularity of this beer type and direct a portion of its production toward this beer variety. As discussed later in this report, another important consideration for a craft brewery in developing its product mix are the differing batch cycle times and overall production requirements of lagers versus ales. Based on the preferences of craft beer consumers, the craft brewery discussed in this report will focus on primarily manufacture ales. The product mix will include two thirds ale and one third lager (depending on sales, this can be easily changed over time).

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[4] A recent of study American beer drinkers found a 2-1 preference for lagers over pale ales and 3-1 over IPAs and stouts (Anheuser-Busch, 2013). The same study cited that lagers account for 75% of the beer market in the United States. A leading Canadian beer retailer with 440 locations in Ontario (The Beer Store) also cites that 70% of its top brands are lagers.

Craft breweries operating in BC primarily produce beer sold in either cans or bottles. While the sizes range, the most common packages include a 0.355 L aluminum can or a 0.341 L glass bottle (sizes vary slightly). While some consumers prefer bottles for taste reasons, the advantages of cans are significant. Not only is this product light and easy to handle (lowering distribution costs), aluminum doesn't lose its properties, regardless of how many times it is re-used (Ferrier, 2001). The use of cans by many of the existing craft brewers also demonstrates this packaging type can be successful. For these reasons, the craft brewery discussed in this report will sell its product in cans. The exception to this is draft product, which will be sold in 50 L kegs.

3.2 Business Environment

Evaluation of the business environment for the beer brewing industry is an important step for entrepreneurs considering entry into this market. This analysis helps managers "better understand the opportunities and threats they face and consequently aids them in building a perception on the future business landscape and how the business might compete profitably" (Carpenter et al., 2012, p. 74). This insight provides a means of developing effective business level strategies for the firm to consider.

3.2.1 *Analysis of the Beer Industry in Canada*

A classic framework to determine the potential profitability of an industry is the five forces model developed by Michael Porter. This model evaluates the power of a firm to purchase its inputs and sell its outputs against the threats of new entrants and substitutes for its products. These forces work together to create a degree of rivalry amongst firms operating within a specified industry. The impacts of these forces are explained below, and the model is presented in further detail in Appendix Figure 1. It is important to note that the beer industry is international in scale. For the analysis below, however, the industry definition is geographically narrowed to Canada. This boundary was selected as it includes firms which are deemed to have the greatest direct impact on the potential profitability of a craft brewery in northwestern BC.

Supplier Power

- The main inputs for beer producers are water, malted grain, hops, packaging (cans or bottles) and/or barrels. The importance of acquiring high quality barley and hops and a lack of alternate substitutes for these products creates elevated supplier power.
- Canada is globally recognized for its high quality and abundant malting barley. This is a main ingredient in beer (next to water) that is domestically available from Prairie Provinces, which provides a competitive advantage for Canadian firms. However, the vertical integration of larger firms via development of their own malting houses has weakened supplier power.
- Demand for hops is increasing due to the fast growth of the craft beer market. Hops growers prefer larger volume purchases to minimize their selling costs. Beer market leaders in western Canada have established exclusive purchase contracts with Canadian producers of high quality hops, which restricts access for smaller brewers and forces them to purchase this commodity from lower quality suppliers. The demand for hops has also experienced price fluctuations due to changes in growing season conditions from year to year.
- Due to the fragmented nature of hop producers, and their small size, this weakens their supplier power.

- Growth among craft beer producers has increased significantly in the past decade in BC. This has created significant order backlogs from suppliers of brewing equipment (e.g. brewhouses, fermenters, packaging equipment etc) and increased their bargaining power with new market entrants.
- Overall, the supplier power within the beer industry is considered to be moderate.

Buyer Power

- The Liquor Distribution Branch holds a buying monopoly on all beer sold in BC. It behaves as an intermediary, purchasing all beer imported and domestically produced to BC and re-sells the product to retail outlets after a mark-up (i.e. tax) is applied. The province of BC also sets minimum price points for all beer products sold in BC[5]. This restricts the power of breweries to freely sell to consumers of its choice and the tax creates a significant cost burden.
- Consumers may easily switch between domestic craft beer brands as the retail prices do not vary significantly. This provides consumers with a high buying power from breweries in BC.
- Buyers of craft beer in BC are government liquor stores, privately owned liquor stores or licensed establishments (i.e. pubs and restaurants). Government liquor stores possess buying power as they require sufficient volume to match their sales, otherwise they may not carry a product. This also exists for private liquor stores and licensed establishments, but to a lesser degree. With the exception of the Ontario market, most producers and retailers operate in distinct businesses, which limits the likelihood of backward integration into the industry.

[5] This policy direction is intended to act as a disincentive to over-consumption

- Overall, the buying power within the beer industry is considered to be moderate.

Threats of New Entrants and Barriers to New Entrants

- As high quality beers "can be sold at premium prices, it is now possible to enter the market on a small scale as a microbrewery [and] the investment in production equipment can be recovered by adding a good margin to the price of the end-product" (Marketline, 2013, p. 18). This increases the threats of new market entrants.
- Federal excise tax and provincial tax rates are lower for smaller producers than larger ones. This is intended to benefit smaller breweries recognizing they lack the financial resources of larger operations. This increases the threat of new small scale breweries entering the industry.
- The three largest breweries in Canada account for 90% of sales[6], and employ economies of scale and proprietary knowledge that smaller producers cannot match or haven't developed. Market leaders have also secured exclusive purchase contracts with suppliers at rates and volumes that smaller producers cannot compete with. This creates barriers to new entrants.
- Recent regulatory changes have positively impacted tax regimes for medium to large breweries in BC, allowing them to expand their operations while paying less tax than previously required. This decreases the threats of new entrants for such producers.
- Within the Northern BC segment of the beer industry, there are significantly less competitors than southern BC markets. It is easy for new entrants to attract attention, however, they may lack the marketing expertise and/or budget to maintain this advantage.

[6] These companies (and their market share) are Anheurser-Busch InBev (43.5%), Molson Coors Brewing Company (40.7%) and Moosehead Brewing Company (6.4%) as of 2013 (Marketline, 2013).

- Sales of imported beer from craft and large scale breweries have been increasing in BC over the last several years, which directly competes with domestic suppliers.
- Overall, the threats of new entrants to the beer industry in BC is considered to be high. This is evidenced by the rapid increase of new breweries in BC. For example, Gierasimczuk and Parry (2013) reported that ten new breweries were planning to open and three existing breweries were expanding their operations in 2013 alone.

Threats of Substitutes

- The main alcoholic substitutes for beer include spirits and wine. Non-alcoholic beverages such as water, energy drinks, tea and coffee can also act as substitutes for beer (Business Monitor, 2012). Among older consumers, health awareness is increasing which may negatively impact the sale of beer amongst this demographic.
- Non-alcoholic substitutes for beer can be healthier and cheaper (e.g. water, tea, flavored drinks), which increases the threats of substitutes for craft beer.
- Consumers are seeking more diverse tastes and the market share for craft beer has been steadily increasing as a result. The low cost of switching among brands has facilitated this trend.
- As reported by Marketline (2013), some establishments will have difficulty operating without selling beer (e.g. pubs) while other establishments (e.g. restaurants) may target demographics more focussed on wine and spirits.
- Overall, the threat of substitutes within the beer industry is considered to be low.

Degree of Rivalry

- The beer market in Canada is highly concentrated; it is an oligopoly. Three firms hold over 90% of the market share and exert considerable influence against each other and smaller firms in the industry.
- In BC, the market share is declining for large firms and increasing for craft breweries (Table 1 and Table 6). To address their lack of growth, large breweries have been horizontally integrating by purchasing successful small scale operators which target craft beer consumers. The purchase of Granville Island Brewing by Molson Coors is an example of this. Rivalry in the craft beer market will increase as more firms enter the market and larger producers seek to regain lost market share.
- As rivalry increases, price competition will place downward pressure on profit margins, particularly for smaller craft beer producers.
- BC breweries are among the least profitable in Canada (Table 5). This will drive large breweries to leverage their economies of scale and superior financial position to exert dominance upon smaller operators.
- Overall, the degree of rivalry within the beer industry is considered to be high.

Porter's Five Forces Model provides an effective approach to define the structure of a particular industry. It also enables a firm to develop a business level strategy that is favorably aligned with the industry conditions and pressures. This paper develops a business level strategy for a craft brewery in northwestern BC based on the Five Forces Model presented above and factors unique to the BC craft beer industry discussed in the following section. This strategy is presented in Section 3.4.

3.2.2 *The Beer Industry in BC*

Understanding the beer industry is a key step for entrepreneurs seeking to sell craft beer in northwest British Columbia. As Carpenter *et al.* (2012) explains, "in theory, an industry is a group of companies that produce or sell the same product in a market. The number of companies can range from one to many. Most industries have several dominant companies and many smaller companies" (p. 81). As per the North American Industry Classification System (NAICS), the industry code for breweries is 31212. Statistics Canada defines breweries within the industry group of Beverage Manufacturing involving "establishments primarily engaged in brewing beer, ale, malt liquors and non-alcoholic beer." (Statistics Canada, 2014).

Data released by the Liquor Distribution Branch (LDB) indicates that small to medium sized breweries have been increasing their sales steadily over the last six years. Interestingly, this upward trend has occurred at a time when sales at large breweries have been in decline (Table 1). The relative success of small breweries over large ones has not gone unnoticed, as Molson Coors Chief Executive Officer Peter Swinburn notes "someone else is eating our lunch in the alcohol space[7]" (Geller, 2012). This realization has led large-scale brewers such as Molson Coors to launch craft beer channels and purchase successful craft breweries such as Ontario Creemore Springs in 2005 and Vancouver based Granville Island Brewing in 2009 (Charkow, 2011).

[7] Large breweries are aggressively pursuing the market for craft beer with focus on new product development and less reliance on lowering costs to increase profits.

Table 1 - Sales (in retail dollars) from BC Breweries from 2008-2013

		Retail Sales Per Year ('000s)						
Brewery production (hL/year)	Product	2008	2009	2010	2011	2012	2013	% change 2008-2013
>160,000 HL	Draft	$99,205	$96,606	$98,555	$91,645	$87,823	$82,979	-16
>160,000 HL	Packaged	$738,984	$750,635	$706,769	$670,414	$665,948	$642,595	-13
	total	*$838,189*	*$847,241*	*$805,324*	*$762,059*	*$753,771*	*$725,574*	*-13*
15,000-160,000 HL	Draft	$8,485	$9,035	$11,543	$13,866	$17,113	$18,983	124
15,000-160,000 HL	Packaged	$38,363	$47,119	$62,281	$82,615	$94,260	$99,987	161
	total	*$46,848*	*$56,154*	*$73,824*	*$96,481*	*$111,373*	*$118,970*	*154*
<15,000 HL	Draft	$12,396	$12,580	$13,535	$14,649	$16,245	$20,494	65
<15,000 HL	Packaged	$9,348	$10,964	$14,171	$16,180	$20,502	$30,207	223
	total	*$21,744*	*$23,544*	*$27,706*	*$30,829*	*$36,747*	*$50,701*	*133*
Draft total		$120,086	$118,221	$123,633	$120,160	$121,181	$122,456	2
Packaged total		$786,695	$808,718	$783,221	$769,209	$780,710	$772,789	-2
	Grand total	*$906,781*	*$926,939*	*$906,854*	*$889,369*	*$901,891*	*$895,245*	

Note – Annual figures are 12 month periods ending in September of each labeled year.
Source of data – BC Liquor Distribution Branch

From 2008 to 2013, the largest increases in brewery sales occurred for packaged beer (i.e. cans and bottles) from breweries with less than 15,000 hL annual output. This was followed by packaged beer sales for medium sized breweries producing between 15,000-160,000 HL annually (Table 1).

3.2.3 *Regulatory Requirements*

Before a brewery can commence operations in BC, a manufacturer's license[8] is required from the provincial Liquor Control and Licensing Branch. The application fee for this license is $550, and additional fees are required to apply for on-site store endorsement ($110), a lounge endorsement ($330) or special event endorsement ($110). In addition to provincial fees and approvals, a Federal Excise Tax license and tax number is also required to operate a brewery.

[8] See http://www.pssg.gov.bc.ca/lclb/docs-forms/LCLB014.pdf

If a brewery is able to secure a manufacturer's license, the *Liquor Control and Licensing Act* requires that a final inspection be conducted. This must occur two weeks before a facility is ready to begin manufacturing. Following the final inspection, a Brewers and Distillers License will be granted, provided that the business agrees to enter into a manufacturer agreement with the Liquor Distribution Branch. This agreement is detailed (39 pages) and specifies obligations the brewery must meet in order to maintain its license to operate.

3.2.4 *Federal Tax Regime*

The beer market in Canada and BC is highly regulated, and brewery output is heavily taxed at the federal and provincial levels. Understanding tax regimes is important for business planning purposes; it assists producers to understand the relationship between their target production levels and applicable tax rates, and also how these tax rates change as brewery output increases over time.

At a federal level, an excise tax applies to all beer sales. Agriculture and Agri-food Canada (2013) indicates "taxes and duties represent the single largest cost category to a brewing operation".[9] As Bowles (2013) explains, the federal excise tax is a progressive tax regime whereby "small and large brewers pay the same tax rates. However, the system provides a benefit to smaller producers since, with lower production levels, they will pay a lower average tax rate than large breweries" (p. 8).

For business planning purposes, it is important that a brewery forecasts its annual production requirements, and strategically plan its output, as the cost implications of crossing

[9] Additional taxes such as federal goods and services tax and provincial sales taxes are incurred by the consumer when the product is sold at retail outlets

annual production thresholds can be significant. The following duty rates in Table 2 are based on the Canada Revenue Agencies Excise Duty Notice, dated July 6, 2006[10].

Table 2 - Federal Excise Tax for Breweries in Canada

Annual production volume increments (hectolitres)	Tax rate per hectolitre	Excise duty relief rate
From 0 to 2,000	$3.12	90%
From 2,001 to 5,000	$6.24	80%
From 5,001 to 15,000	$12.49	60%
From 15,001 to 50,000	$21.85	30%
From 50,001 to 75,000	$26.54	15%
Greater than 75,000	$31.22	0%

3.2.5 *Provincial Tax Regime*

The legislative basis for the provincial tax system in BC is identified in Section 18.1b of the *Liquor Distribution Act*. Compared to the federal tax regime, the provincial tax system (referred to as a mark-up) charges breweries a significantly higher rate for each litre of output, and varies depending on whether the product is sold in packaged or draft form (Table 3). Similar to the federal tax system, it is important breweries plan in advance to anticipate the tax structure that will apply to their operations as it has large implications for their profit earning potential.

Table 3 – Provincial mark-up tax by Brewery production threshold

Threshold Categories	Beer Type	Mark-up/Litre
≤ 15,000 hL	Packaged	$0.97
	Draft	$0.67
> 15,000 hL ≤ 160,000 hL	Packaged	$1.08
	Draft	$0.75
> 160,000 hL	Packaged	$1.63
	Draft	$1.12

Source – BC Liquor Distribution Branch

[10] http://www.cra-arc.gc.ca/E/pub/em/edbn8/edbn8-e.pdf

3.2.6 *Doing Business with the Liquor Distribution Branch*

As described earlier in this report, a unique aspect of the business environment for breweries in BC is the requirement to conduct business with the BC Liquor Distribution Branch (LDB). This crown corporation holds a government regulated monopoly on all sales of liquor in the province. As all beer made in BC must be first sold to the BC LDB before it can be sold at a retail location, this impacts craft breweries in a significant way, particularly if a producer desires to sell product at Government Liquor Stores (GLS). These impacts include:

- In order to sell beer at a GLS or a Licensed Retail Store (LRS), a Stock Keeping Unit (SKU) must be created and registered. This is required to secure a shelf spot in GLS locations where the beer is sold.
- While no minimum volumes are specified, the LDB requires breweries to deliver sufficient product to keep their shelves stocked at all times. The exception to this is seasonal purchases, where the LDB may purchase a smaller amount of product for sale during a specified time period. This approach is used by some existing breweries for their unique and time limited summer or winter seasonal offerings.
- Distribution is also regulated by the LDB. It must occur using their in house services, or through a private beverage distributor (e.g. ContainerWorld[11]), but not both. Breweries must use one channel for all of their products to all locations.
- The minimum prices at which breweries may sell their product are controlled by law. Section 18.1b of the *Liquor Distribution Act* states that the LDB's General Manager may set the price, or a range of prices, at which liquor must be sold in the province (subject to

[11] See http://www.containerworld.com/CWFS/WEB_PUBLIC/PUB_HOME

Ministry of Finance approval). Prices set by individual breweries which exceed the minimum price threshold are done at their discretion. As of April 1, 2014, the minimum price for packaged beer was \$3.54/litre and \$2.22/litre for draught beer.

- The LDB requires that all beer sold in BC has a provincial mark-up applied before it is sold for consumption. Sample calculations presenting how and sales prices are determined for packaged and draft product are presented in Appendix Table 4 and Appendix Table 5 respectively.
- For domestic beer sold to the LDB, payment terms are 30 days based on the receipt date of the product. As the LDB payments are produced twice per month, payment terms are effectively 30-45 days.

3.2.7 *Competition*

The majority of craft breweries are located in the Mainland/Southwest Development Region (51%), followed by Vancouver Island/Coast (22%) and the Thompson Okanagan (14%) (Table 4). This trend roughly corresponds to sales patterns, indicating that producers have positioned their operations close to the largest consumer markets (Table 7) and largest populations provincially. While beer producers located in southern BC are closer to consumers (lowering distribution costs), the relative lack of breweries in northern BC also provides strategic marketing advantage. Northern producers can leverage their rarity as a competitive advantage that southern producers cannot replicate, however, this comes at a high operating cost given their isolation and distance from suppliers and consumers.

As of January 2014, one small brewery is operating in northwestern BC (Wheelhouse Brewing in Prince Rupert). This firm has limited market penetration as production has occurred for less than one year. It is also important to note a second brewery, the Skeena

Brewing Company located in Terrace, plans to begin construction and operation in the near future. Aside from these two operators, the main brewery and competitor in northern BC is Pacific Western Brewing (PWB), located in Prince George. This business is large (160,000 HL annual production) (Bowles, 2013) and well established. PWB competes aggressively on both a price and product differentiation. This brewery produces the lowest priced beer in BC and has been selling specialty organic craft beer (Natureland and Scandal brands) for a number of years.

Table 4 - Number of Breweries in BC by Region in 2013

Development Region	Number of Breweries	Percentage of All Breweries in BC	Population (total)
Mainland/Southwest	33	51	2,805,587
Vancouver Island/Coast	14	22	788,267
Thompson Okanagan	9	14	540,571
Kootenay	4	6	153,245
Cariboo	2	3	163,217
North Coast	2	3	59,606
Nechako	1	2	39,479
Northeast	0	0	72,381
Totals	65	100	4,622,573

Notes:
1 - This table excludes brewpubs with limited distribution
2 - This table includes breweries that are in the final stages of development as per Hallett (2013)
3 - This table includes producers with <160,000 hL annual production (small to medium scale breweries)
4 - Population estimates based on BC Stats data for 2012

3.2.8 *Relative Profitability of Breweries in BC*

As craft brewery operators operating in BC will testify, the margins on beer manufacturing are relatively small. According to Industry Canada's SME Benchmarking tool[12], which reflects tax returns filed by incorporated and unincorporated businesses in Canada, 62.8% of BC breweries were profitable in 2010 and 65.8% were profitable in 2011 (Table 5). This data was derived from breweries with revenues $30,000 and $5,000,000 annually. For comparison, it is important to note that a lower percentage of breweries in BC

[12] Available at http://www.ic.gc.ca/eic/site/pp-pp.nsf/eng/home

are profitable compared to other provinces. This is also true when comparing breweries to the broader industry averages. The overall manufacturing industry in BC (of which breweries are part) had a higher percentage of profitable businesses in 2010 and 2011. This indicates that the financial success of breweries lags that of the manufacturing industry, and other provinces possess more favorable market conditions for beer manufacturers than in BC.

Table 5 - Small Business Profiles by NAIC Classification in 2010 and 2011

Small business profile - Breweries (NAICS 31212)						
		Percentage in 2010			Percentage in 2011	
Area	# of Firms surveyed	Profitable	Not Profitable	# of Firms Surveyed	Profitable	Not Profitable
BC	43	62.8	37.2	38	65.8	34.2
Ontario	65	63.1	36.9	60	63.3	36.7
Quebec	36	72.2	27.8	N/A	N/A	N/A
Canadian industry average	167	67.1	32.9	150	68.7	31.3
Small business profile – All manufacturing (NAICS 31-33)						
BC	9,156	70.8	29.2	8,641	70.5	29.5
Ontario	23,410	71.2	28.8	22,291	71.3	28.7
Quebec	14,722	74.9	25.1	14,494	73.3	26.7
Canadian industry average	58,938	72.5	27.5	56,268	72.3	27.7

Note - This data includes incorporated and unincorporated businesses

3.3 Marketing Analysis

A marketing analysis is an important component for any business plan, as it identifies how a company intends to sell its product. As Kotler et al. (2008) explains, marketing is "the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational goals" (p. 324). The intent of this section is to present a market analysis of craft beer in BC. This will be achieved by investigating the total amount of beer sold in BC and how much is sold in the northern portion of the province. Aspects of the target market for craft beer will also be discussed. Forecasting potential demand in northern BC for craft beer is a key aspect of this study and forms the basis for subsequent sections of this report.

Contemporary marketing plans often identify a marketing mix which all managers should consider. This includes product, price, promotion and place. These factors will not be discussed in the marketing section of this report as they are discussed elsewhere, as presented below.

- **Product** refers to the brand, its features, how it is packaged and accompanying services and warranties offered. This topic is briefly discussed in Section 3.1.
- **Price** refers to the list price of the product, discounts, allowances, credit terms and payment period. This topic is discussed in Section 3.6.3.
- **Promotion** refers to product advertising, sales promotion and planned publicity. This topic is briefly discussed in Section 3.4.
- **Place** refers to where and how the product will be sold, including outlets, channels, transportation and stock levels. This topic is discussed in Sections 3.3.4 and 3.5.4.

3.3.1 *Craft Beer Market Share in Northern BC*

Understanding where beer is sold within the province is important marketing information for new and existing breweries. Regional beer, wine and spirits sales are published by the LDB through store specific reports[13]. Production and sales information is also available for beer manufacturers in British Columbia though LDB's Market Review reports[14]. While these reports provide sales and production data for small (>15,000 hL), medium (15,000-160,000 hl) and large (>160,000 hL) scale breweries over time, they do not differentiate between craft and non-craft breweries.

[13] http://www.bcldb.com/publications/store-sales
[14] See http://www.bcldb.com/publications/archives?y%5Bvalue%5D%5Byear%5D=&r=4&b=quarterly

Fortunately, this study received in-kind support from the LDB by way of custom reports. These reports provided sales information of 21 top craft breweries in BC (Appendix Table 2) by retail outlet, including Government Liquor Stores (GLS, n=197), Licensed Retail Stores (LRS, n=500) and the top selling licensed establishments (i.e. restaurants, pubs and bars, n=500). For the purposes of this study, these 1,197 locations were cross referenced by BC Stats Development Regions to assess the relative trends in craft beer sales throughout the province (Table 7).

Table 6 - Production (litres) from BC Breweries from 2008-2013

	Hectolitres of Product Sold							
Brewery production (hL/year)	Product	2008	2009	2010	2011	2012	2013	% change 2008-2013
>160,000 HL	Draft	358,959	334,866	334,393	297,178	279,455	265,528	-26
>160,000 HL	Packaged	1,856,947	1,844,736	1,721,163	1,594,284	1,587,933	1,578,751	-15
	total	*2,215,906*	*2,179,603*	*2,055,556*	*1,891,462*	*1,867,388*	*1,844,279*	-17
15,000-160,000 HL	Draft	30,759	31,638	39,589	45,916	55,667	62,000	102
15,000-160,000 HL	Packaged	108,615	130,938	171,906	222,795	251,670	266,094	145
	total	*139,374*	*162,576*	*211,496*	*268,710*	*307,338*	*328,094*	135
<15,000 HL	Draft	41,432	40,021	42,511	44,460	49,620	61,496	48
<15,000 HL	Packaged	18,978	21,956	27,514	29,918	38,609	56,355	197
	total	60,410	61,978	70,025	74,378	88,229	117,851	95
Draft total		431,150	406,526	416,493	387,553	384,743	389,024	-10
Packaged total		1,984,540	1,997,630	1,920,583	1,846,997	1,878,212	1,901,201	-4
	Grand total	*2,415,691*	*2,404,156*	*2,337,076*	*2,234,550*	*2,262,955*	*2,290,225*	

Note – Annual figures are 12 month periods ending in September of each labeled year

For business planning purposes, it is important to note that at least 16% of all beer produced in BC is craft beer. This is based on total beer production in 2012 compared to production of top craft breweries in BC during the same year. For example, 226,295,492 litres of beer were sold in BC in 2012 (Table 6) and of this amount, at least 36,155,100 litres was craft beer (Table 7). It is important to note this craft beer estimate is based on output of the twenty-one craft breweries in Appendix Table 2. As these breweries do not reflect all craft beer made in BC, the total production of craft beer is likely higher, as is the market share estimate of 16%.

Table 7 - Craft Beer Sales at Select Breweries by Region in 2012

	GLS		LRS		Draught		Total	
Development Region	% market	hectolitres	% market	hectolitres	% market	hectolitres	% market	hectolitres
Cariboo	2	2,277	1	858	0	534	1.1	3,668
Kootenay	4	4,773	3	2,596	1	1,733	2.7	9,101
Mainland/Southwest	60	64,928	43	43,012	46	70,097	49.5	178,036
Nechako	1	696	0	257	0	0	0.3	953
North Coast	1	912	1	614	0	154	0.5	1,680
Northeast	1	608	0	49	0	637	0.3	1,294
Thompson Okanagan	11	11,817	12	12,093	3	4,716	8.7	28,626
Vancouver Island/Coast	21	22,869	39	38,819	14	21,171	24.5	82,858
Unknown			2	2,006	35	53,329	12.5	55,335
Totals	**100**	**108,879**	**100**	**100,303**	**100**	**152,369**	**100**	**361,551**

Notes:
1 - GLS = Government Liquor Store
2 – LRS = Licensed Retail Store (non-government)
3 – Draft = Non-packaged beer sold at top 500 locations by litre sales in BC
4 – Data reflects sales by craft breweries presented in Appendix Table 2

Considering that at least 361,551 hectolitres of craft beer are sold in BC, and 7,595 hectolitres are sold in northern BC based on sales in the Cariboo, Nechako, Northcoast and Northeast regions (Table 7) this means that the northern market for this product is 2.1% of total production in the province (Figure 1). Also worth noting is that 49% of craft beer is sold in the Lower Mainland/Southwest Region, followed by Vancouver Island/Coast (25%) and Thompson Okanagan (9%) (Figure 1). This information must be considered by individuals seeking to start up a brewery in northwest BC for two reasons. Firstly, such a business will be situated approximately 1,200 kilometers from the main markets in the province. Secondly, based on the northern market share and total craft brewery production in 2012, 7,595 hL of craft beer was sold (and presumably consumed) in northern BC. As such, one small scale brewery (<15,000 HL annual production) could supply the entire craft beer market for all of northern BC. Given this situation, the business environment for craft breweries in northwest BC will be particularly sensitive to threats from new entrants and resulting losses in market share that may occur.

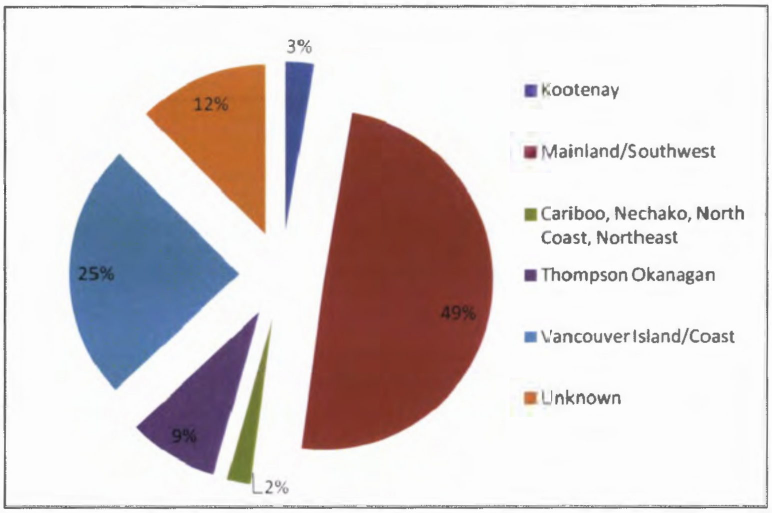

Figure 1 - Total Sales (Hectolitres) of Craft Beer by Development Region in 2012

3.3.2 *Target Market*

Based on the Five Forces Analysis presented earlier in this report and distribution restrictions presented in Section 3.5.4, the initial target market will focus on consumers in northern BC. There are practical reasons for this; it is easier and cheaper to reach consumers closer to where beer is produced. Also, there is a high likelihood that beer drinkers in northern BC can be persuaded to purchase locally made craft beer by leveraging the home turf advantage held by such business over producers in southern markets.

The target market for a craft brewery in northwest BC should also focus on men, aged 19-50. In a study conducted by Statistic Canada on the beverage consumption of Canadian adults (Garriguet, 2008) it was determined this demographic consumed the most beer on average, across all Canadian households. The exact amounts of beer varied with age; males 19-30 consumed on average more than three bottles per day (1,159 grams) while males age 31-50 consumed more than two bottles per day (908 grams). While this information is necessary from a market segmentation perspective, it also highlights a challenge facing a craft brewery in northern BC. As presented in Table 8, northern BC possesses the lowest percentages of the age demographic that is most likely to consume beer.

Table 8 - Males Aged 19-50 in BC in 2012

Development Region	Year	Gender	19 - 30	31 - 50	Total	% 19-30	% 31-50
Vancouver Island/Coast	2012	M	58,719	96,771	386,396	0.15	0.15
Mainland/Southwest	2012	M	264,877	410,500	1,390,874	0.66	0.64
Thompson-Okanagan	2012	M	41,283	64,439	266,548	0.10	0.10
Kootenay	2012	M	9,544	19,067	76,490	0.02	0.03
Cariboo	2012	M	13,610	21,855	82,903	0.03	0.03
North Coast	2012	M	4,587	8,003	30,312	0.01	0.01
Nechako	2012	M	2,841	5,313	20,359	0.01	0.01
Northeast	2012	M	7,883	10,614	37,560	0.02	0.02
British Columbia total	2012	M	403,344	636,562	2,291,442		

Data Source – BC Stats

Another challenge facing the marketing for a brewery operating in northern BC is the small (albeit growing) market for craft beer. According to a northern Government Liquor Store manager who desired to remain anonymous, the majority of beer consumers in the north select brands that are lagers, offer low prices and possess little differentiation on taste (which are characteristics of beer produced at large volume breweries). This observation is supported by data on craft beer sales versus non-craft beer sales provincially (Table 9) which indicates that northern BC has the highest percentages of non-craft beer sales in the province. To overcome this challenge, it would be prudent for a new craft brewery in northwestern BC to sell beyond northern markets. It is recommended that the target market in southern portions of the province focus on communities such as Nelson, which share similar cultural values as northwest BC. Pursuing such an approach may allow for reciprocal distribution agreements to be reached with competitors such as the Nelson Brewing Company to reduce costs and increase exposure.

Table 9 - Sales at Government Liquor Stores by Product Type in 2012

	Litres of Product Sold at Government Liquor Stores						
Regional District	Spirits	Wine	Ciders/Coolers	Beer (total)	Beer (craft)	% Craft Beer Sales	% Non-Craft Beer Sales
Vancouver Island/Coast	2,886,435	7,691,305	3,080,411	14,575,051	2,286,863	16	84
Mainland/Southwest	16,545,978	32,401,465	16,349,725	54,812,907	6,492,778	12	88
Thompson Okanagan	2,293,056	4,612,416	2,164,730	12,270,664	1,181,688	10	90
Kootenay	733,085	1,434,274	793,815	5,509,644	477,287	9	91
North Coast	253,953	404,474	267,136	1,448,108	91,200	6	94
Cariboo	839,171	1,138,429	800,160	4,002,163	227,684	6	94
Nechako	225,224	279,393	259,693	1,480,658	69,577	5	95
Northeast	395,308	354,677	306,026	2,065,046	60,808	3	97
totals	24,172,210	48,316,433	24,021,696	96,164,241	10,887,886		

Notes:

1 - Data is based on Government Liquor Store (GLS) sales only

2 - Craft beer sales reflects the 21 breweries presented in Appendix Table 2

3 - GLS sales data is based on fiscal year 2012/2013

4 - Craft beer sales data is based on calendar year 2012

3.3.3 *Sales Channels*

In northern BC, the majority of craft beer is sold in government liquor stores, followed by packaged beer at privately run liquor retail outlets and draft beer at licensed establishments. This reflects volume sales for the Cariboo, Northeast, North Coast and Nechako development regions (Table 7) for the main craft breweries in BC (Appendix Table 2). Recognizing government run liquor stores sell 45% more beer than restaurants, bars and private retail outlets combined, a craft brewery in northwestern BC that desires to sell local must plan to target this sales channel.

Aside from government liquor stores, the craft brewery discussed in this report should also establish relationships with popular restaurants in the north. The benefits of such a business to business relationship are mutual; the brewery is able to secure a valuable sales channel and the restaurant is able to elevate its reputation amongst discerning patrons by offering a local and high quality liquor beverage. As consumption at restaurants peaks during the summer and fall months in northwest BC due to an influx of tourists to the area, a craft beer producer in this region should plan to increase its production to meet this seasonal demand.

3.3.4 *Marketing Summary*

Based on the overall market share for craft beer in BC and the percentage of craft beer that is sold in the north, it is estimated that approximately 7,595 hL of craft beer is sold (and presumably consumed) in northern BC annually.

This business plan assumes that a new craft brewery in northwestern BC could reasonably capture 15% of the market share for craft beer in the north. This estimate is based on the relative lack of northern-made craft beer and the perception that such a product could gain a high level of loyalty amongst consumers. Experiences by Plan B Brewing also indicated that continual sales growth for craft beer is possible in northwest BC and market penetration could be achieved with relatively limited distribution investment. Taking into account these factors, a 15% market share of 7,595 hL creates a need for a facility to produce at least 1,139 hL of beer in its first year, with capacity to expand in the future assuming product demand and market increases are experienced.

3.4 Business Level Strategy

A business level strategy is important as it identifies an approach to effectively compete with rivals while creating value for consumers. The following section identifies business level strategies for a craft brewery in northwestern BC. These strategies are based on the business environment and marketing strategy sections discussed earlier in this report. These strategies also take into consideration weaknesses and strengths that face a new market entrant to the beer industry in northern BC. Weaknesses must be overcome and strengths must be leveraged for the craft brewery discussed in this report to be successful.

Weaknesses

- Northwestern BC is located >1,000 kilometers from the Lower Mainland and Vancouver Island where the majority of craft beer is sold.
- Northern BC possesses the lowest rates of individuals who are most likely to consume beer compared to southern markets.
- The northern BC market for craft beer is small and easily saturated.
- Distribution costs and buying power of government liquor stores are high. Selling through non-government retailers requires significant marketing.
- Craft beer manufacturers lack an independent quality assurance program similar to the Vinters Quality Alliance (VQA) in BC and Ontario. This allows the strong reputation of craft beer quality in BC to be impacted by producers with lower standards.

Strengths

- A lack of existing breweries in northern BC makes it easier to gain product awareness and loyalty due to a home field advantage and first mover advantages.
- Most craft breweries operate in southern BC and have to incur high industrial rental costs (approximately $20/square foot/year), whereas it is much lower in northern BC. This benefit to northern producers may partially offset by higher distribution costs.

Business Level Strategies

- A popular approach for many new breweries is to start by serving the local market, and growing their distribution as revenues increase. This is a strategy that should be considered for any new craft brewery in northwestern BC and the lack of existing producers in this geographical area support this approach. Focussing on northern markets also increases the chances of attaining a higher level of market penetration than could be achieved elsewhere. It will be easier for a new producer to attract attention (through media, word of mouth et cetera) in the north than in the south due to a scarcity of this business type.

- A craft brewery in northwest BC should focus on increasing the taste sophistication of northern beer drinkers to increase its market share. There is evidence to suggest that key craft beer markets in BC are unsaturated, and this trend may apply to northern BC as well (Gierasimczuk & Parry, 2013).
- Relatively few firms produce organic and/or gluten free beer in the province and this is a strategy that should be considered. Opportunities exist to specialize in this niche as there are few competitors.
- A craft brewery in northwestern BC could leverage its location to differentiate from its competitors on a non-taste basis. The natural beauty and wild environment of the north can be used to differentiate from southern competitors and create a unique product brand.
- The strong local agribusiness base in northern BC could be used to create locally sourced ingredients. For example, a 100 mile beer made from local ingredients may be popular amongst craft beer drinkers in northern BC and provincially. Coupling this strategy with support for the creation of an independent quality assurance program (similar to the VQA) would elevate the status of a craft brewery in northwestern BC over its rivals.
- Distribution cost is a key factor that needs to be overcome to allow a brewery in northwest BC to be profitable. Business to business coordination with trucking

companies must be conducted to identify ways to ship beer throughout northern BC at a low cost. Examples of employing grocery trucks travelling south empty could be an opportunity to transport beer to northern retailers for less. As an extension of this strategy, reciprocal distribution agreements could be investigated with breweries in southern BC to lower costs.

- International exports are a business level strategy that should be investigated. Breweries based in Prince George and Victoria have demonstrated this approach can be successful. Northwest BC's proximity to a port in Prince Rupert may facilitate the success of this strategy.

3.5 Operations Plan

Building on the previous sections of this report, the following operations plan will discuss staffing requirements for a craft brewery in northwestern BC, the required brewing equipment (i.e. fixed asset investment) and the required inputs to manufacture beer. This section will also propose a distribution plan to deliver beer to market and investigate the merits of two main locations where such a business could be situated in northwest BC.

3.5.1 *Supporting Team*

Based on an annual production of 2,000 hL, it is determined at least three individuals will be required to operate a brewery of this size. These individuals will require knowledge of brewery operation and beer manufacturing (a brewmaster), marketing and sales and finance and administration. This number of staff appears to be consistent with other breweries operating in BC with comparable production volumes, such as Hoyne Brewing in Victoria which produced approximately 3,000 hL in 2012 (Hallett, 2013). The total wages and benefits available for this team during the first three years of operation are presented in Section 3.6.4.

3.5.2 *Brewing Equipment*

As discussed in the marketing plan of this study (Section 3.3), if a new craft brewery in northwest BC could capture 15% of the market, this would create a need to produce 1,139 hL of beer annually. It is important to note, however, that producing at this level is considered by several BC beer industry experts to be below the breakeven level, where expenses exceed revenues. Individuals actively involved in the brewing industry have indicated that a minimum annual production of approximately 2,000 hL per year should be targeted to generate profits. Taking into consideration this feedback, the following operations plan will be based on a production volume of 2,000 hL per year. The pros and cons of this approach are discussed further in Section 3.6.2.

To identify the equipment required to produce 2,000 hL of beer per year with capacity to expand in the future, two quotes were gathered from leading industry suppliers; Allied Beverage Tanks Inc. ("Allied") in Chicago, Illinois and Diversified Metal Engineering ("DME") Ltd. of Charlottetown, Prince Edward Island. While the quotes provided from each company were comparable, the DME quote is presented in this report as it was the most comprehensive and costs were provided in Canadian funds (Appendix Table 3). Based on an initial production of 2,000 hL, Allied and DME both recommended a 15 brewers barrel (bbl) system (i.e. brewhouse) and a combination of fermentation vessels. When considering brewery equipment needs, it is important to note that beer manufacturing is a batch process and the primary limitation to brewing capacity is the number of fermentation vessels for an operation (Appendix Figure 3). Based on recommendations provided by Allied, this business plan proposes to initially install three fermentation vessels. The following calculations identify how annual production is commonly determined based on the number of beer batches brewed per year and the volume of the fermentation vessels.

- 50 week work year divided by two week production cycle (common for ales) = 25 batches per fermentation vessel
- 25 batches multiplied by one 35 hL fermentation vessel = 875 hL per year
- 875 hL per year multiplied by three fermentation vessels = 2,625 hL per year

Based on this calculation, a 15 bbl brewhouse with three 35 hL fermentation vessels is capable of producing 2,625 hL of beer. Depending on the beer type i.e. ales or lagers, the time required to brew a batch of beer will differ. As Allied explains "top-fermenting ales take two weeks to process a batch while bottom fermenting lagers take 3-4 weeks to process. Thus, a brewery's annual production capacity is determined primarily by the number and size of tanks (fermentation and serving) that it has, and the annual production capacity of a brewery is expanded by adding additional tanks" (Allied Beverage Tanks, 2014). As the brewery outlined in this paper will produce both ales and lagers (at proportions of approximately two thirds and one third respectively), the production estimate of 2,625 hL will be lowered by 292 hL to account for the longer processing time per batch for lagers. This is calculated as follows:

- 50 week work year divided by three week production cycle = 16.7 batches of lager per fermentation vessel
- 16.7 batches of multiplied by one 35 hL fermentation vessel = 583 hL of lager per year
- 875 hL per year of ale production (as per calculations above) multiplied by two fermentation vessels = 1,750 hL of ale per year

As such, the total annual production with ale and lager production using three fermentation vessels will be 1,750 hL for ales and 583 hL for lagers, totaling 2,333 hL production per year. These sample calculations can be modified to meet the 2,000 hL production target identified in this report for year one by reducing the number of batches brewed. Ideally, this would occur following seasonal demand patterns, as less beer is generally consumed during the winter versus summer months.

The key benefit of a 2,000 hL brewery system is that it is strategically sized for the northwestern BC market. It can produce volumes across the current and future demand for craft beer without having to significantly modify the fixed asset investment identified in Appendix Table 3 (with the exception of possibly needing to add 1-2 extra fermentation vessels). According to Sound Brewing Systems (2001), this is a common problem for many small scale production breweries after their first several years of operation. Another key benefit of a 2,000 hL system is that it achieves a greater economy of scale than a smaller system. As illustrated in Appendix Figure 2, a 15 bbl system can increase its total output at a greater rate with the same labor input (brews/week) than a system half its size. For example, a 7 bbl system can increase its output by approximately 1,425 barrels per year by increasing the number of batches brewed per week from one to five. Given the same increase in labor input, a 15 bbl system can increase its production by 3,150 barrels per year. Clearly, as the brewing system increases in size, greater efficiency from labor inputs can be achieved, which is important for a manufacturing operation with limited staff.

3.5.3 *Brewery Inputs*

Major ingredient items required to operate a 15 bbl brewery are sufficient supplies of malted barley, hops and yeast. All of these items can be sourced from the Canada Malting

Company in Vancouver, BC. The benefit of ordering brewery commodities through this supplier is their connection with the Country Malt Group. This company is able to supply required packaging (i.e. bottles and kegs) in addition to a large variety of beer finishing products such as sugars, spices and fruits. In the long term, this business would seek to source local ingredients to the extent possible. As local capacity does not currently exist, however, this cannot be relied upon in the short term.

3.5.4 *Distribution Plan*

Finding an effective manner to distribute beer is a key challenge in northwestern BC. Retail outlets in northern BC for craft beer are concentrated in communities separated by significant spatial distances. Distribution networks are also not well established to transport temperature sensitive commodities such as beer products in a cost effective manner. Adding to these challenges, the distribution of beer manufactured in BC is regulated by the Liquor Distribution Branch. Breweries may opt to have their packaged product distributed by the LDB or by a private distributor, but they cannot do both. One method must be selected for all products to all locations. If a producer selects the LDB to distribute their beer, products must be first shipped to the LDB warehouses in Kamloops or Vancouver and then they will be distributed to retail locations throughout the province. There are two main costs of using LDB distribution. They include:

- transport costs to ship beer to the closest distribution warehouses (this will be significant if a brewery is not located in close proximity to either Vancouver or Kamloops)
- distribution fee of $0.10 per litre charged by the LDB. This flat rate fee is charged regardless of the end destination for the product

Under this model, it is considerably cheaper for a brewery in southern BC to ship their product to the LDB warehouse, lowering their distribution costs relative to northern producers. For example, if a brewery operating in Smithers wanted to sell its product locally, it would be required to pay shipping to transport its beer to Kamloops and pay again to have it shipped back to Smithers. This means that a product made in the north is required to travel twice the distance to be sold in the north, as opposed to a product that is made in the south and destined to be sold in the north. This distribution model eliminates the home turf advantage for northern producers and actually makes it cheaper for southern producers to sell in the north.

Given the challenges of using LDB distribution, it is recommended that a craft brewery in northwest BC investigate the use of private transport companies to ship its product. As discussed in 3.4, business to business relationships with trucking companies must be established. The location of northwest BC communities along a primary east-west highway corridor means that grocery suppliers delivering product to the north will be travelling south empty. A craft brewery could potentially deliver its product to northern BC and southern markets at reduced cost by filling these empty loads.

3.5.5 *Brewery Location*

A new brewery in northwestern BC must carefully plan its location. This requires knowledge of municipal zoning and brewery permitting requirements that exist. In some cases, zoning bylaws may not allow for a beer manufacturing facility and related activities to exist. As Wiebe (2012) explains "brewers complain that municipal development offices rarely seem prepared to handle applications from breweries, or that municipalities have limiting rules that make operating a brewery especially difficult." The latter point proved especially true for Plan B Brewing (now out of business), a first mover for beer manufacturing in Smithers, a community in northwestern BC. When this operation initially commenced in September 2009, it was granted approval under a temporary use permit, which provided no long term certainty. When it sought to expand its operations, it was recognized that no zone existed which allowed the business to conduct its activities (Town of Smithers, 2012). Therefore, it is important that new breweries work closely with municipal planning staff to ensure that operations are located in an area permitting all current and future activities. A failure to complete this may result in lengthy delays and significant costs.

In general, operating a brewery in a community where a beer manufacturing facility exists or formerly existed is easier, as zoning modifications may have already occurred to accommodate such a business. For example, as a result of petitioning from Plan B Brewing, the Town of Smithers amended its Zoning Bylaws to include a definition of a microbrewery[15] and also include a microbrewery as a permitted use in a number of its commercial zones (including C-1, C-1A, C-3 and C-4 as per Bylaw No. 1702). While this amendment makes it considerably easier for new beer manufacturing facilities to commence operations in Smithers, this does not mean the zoning process is easy to adhere to. Strict rules exist which restrict the size of retail space for any manufacturing facility (to $50m^2$ or 10% of the gross floor area, whichever is less) in addition to regulations for water use, waste disposal and public hearing processes.

In the community of Terrace, establishing a brewery may be harder than Smithers as this business type is not described in this community's zoning bylaws. Breweries can face stumbling blocks in this community from a municipal planning perspective, as they involve

[15] Defined as "a small scale brewery that produces less than 15,000 hectolitres of beer annually and includes accessory uses of wholesaling, tours, tastings, retail sales and consumption of beer produced on-site" (Town of Smithers, 2012)

brewing and selling activities. The former is industrial in nature, while the latter is retail oriented. As the Sustainability Coordinator for Terrace pointed out, if the principal activity is brewing beer, with tasting and sales as the secondary activity, then the most appropriate zoning would be M1 – light industrial. Based on Terrace's zoning bylaw map, there are few parcels zoned M1 in the downtown core. This presents challenges for new breweries seeking to establish operations in Terrace. The lack of central locations zoned for breweries decreases the potential exposure and foot traffic based sales. The latter is particularly important to ensure the viability of tasting rooms, tours, and on-site sales of beer products.

3.6 Financial Analysis

The financial section of this report builds on the market analysis and operational requirements section to describe the potential profitability of a craft brewery located in northwestern BC. The intent of this section is to present financial information commonly contained within a business plan in addition to financial data required by the Liquor Control and Licensing Branch for a brewery to receive a manufacturer's license.

3.6.1 *Approach Used to Conduct Financial Analysis*

The ideal financial analysis for a new business contains sufficient information for its managers to maximize profits and for its investors to make informed decisions. For any business, a bottom up approach to gather information is the ideal way to assess profitability because it relies upon real life financial information. This study initially attempted to construct the following financial statements using a bottom up approach. Over time, however, it became clear that this technique was not feasible for several reasons. Firstly, the brewery discussed in this report is hypothetical and many of the specific details are lacking.

This includes identification of which community this business will operate, land and building costs and current commodity costs (they are subject to fluctuation, especially hops). Secondly, the author has attempted to identify all expense items that a craft brewery would require to operate, but there will inevitably be additional items overlooked due to a lack of operational experience. While attempts were made to overcome these barriers by requesting access to the financial statements for the only craft brewery that operated in northwestern BC, these records were not provided. For these reasons, the bottom up approach was not deemed useful and another way to assess construct the financial statement was required.

Recognizing the challenges presented through the bottom-up financial analysis approach, a modified top-down method was selected. This method relies upon the financial statements of incorporated breweries operating in BC. Normally this information is proprietary and closely protected for competitive reasons, however, it was possible to access this data through Industry Canada's Small and Medium Enterprise (SME) benchmarking tool. This database allows users to query tax returns of businesses operating in Canada by their North American Industry Classification Code. Businesses with revenues ranging from $30,000 to $5,000,000 per year are included in this database. Data is not available on individual businesses, but a subsample of all firms operating within each NAIC are surveyed and their financial information is made publicly available for one year at a time (time series data is not available due to concerns from Statistics Canada). The SME benchmarking tool summarizes the financials in three formats, including Income Statements, Balance Sheet and Key Financial Ratios. For each of these financial statements, data are also stratified into quartiles according to the number of businesses and their revenue for the year surveyed. The quartiles used in 2010 and 2011 are presented in Appendix Table 6 and Appendix Table 7 respectively).

The availability of the SME benchmarking data made it possible for this study to compare the potential revenue from a craft brewery with 2,000 hL in annual production to the revenues of similarly sized breweries already operating in BC. This provides a convenient means of assessing the potential profitability of a brewery by relying on operators already in the industry. While this is high quality data, it is also important to note its limitations. Most importantly, this data provides insight for one year at a time, and may not reflect the broader market conditions. Secondly, the data is several years old (2011 data was released in February 2014). This can lead users of this information to form opinions that reflect past market conditions as opposed to current market conditions. Thirdly, this data is heavily skewed to business operating in southern BC as 75% of breweries operating in the province are located in the Lower Mainland and Vancouver Island Regions (see Section 3.2.2). As such, this data does not reflect the unique operating conditions that may be experienced by a craft brewery operating in Northwestern BC. Due to the lack of representational data for breweries operating in northern BC, the financial data used for this report will be adjusted to incorporate known differences in the operating environment between southern and northern BC. These changes are presented in Section 3.6.4.

This study relied upon two years of SME benchmarking data, including 2010 and 2011. While additional data would have been preferable, it was not available from Statistics Canada. To apply this information to the hypothetical brewery discussed in this report, data for the top 25% revenue quartile from 2010 and 2011 were averaged and a common size statement was developed. That is, all income statement and balance sheet items were converted to percentages, which allowed this study to develop financial statements based on known costs and sales projections. While the SME data is a useful reference, it is also variable from year to year. This is extremely important to remember when interpreting results presented in the following sections. For example:

- In 2010, the lowest 25% of breweries (incorporated and unincorporated; by revenue) and the highest 25% of breweries were the most profitable (Appendix Table 6). Those in between were not profitable or marginally profitable. In 2011, the reverse was true; the bottom 25% of breweries (by revenue) and top 25% were not profitable, and those in between turned a profit (Appendix Table 7).
- The 2010 63% of all breweries in BC were profitable and in 2011 this increased to 66% of all breweries being profitable (Appendix Table 6 and Appendix Table 7).

3.6.2 *Production Forecast*

The marketing analysis outlined in this report suggests that if a craft brewery targeted northern BC and secured at least 15% of the market, it could be possible to sell up to 1,139 hL per year. It is important to note that producing at this level is considered by several industry experts in BC and the USA[16] as below the breakeven level, where expenses exceed revenue. As part of research conducted for this study, individuals actively involved in the brewing industry indicated that the minimum annual production of 2,000 hL per year should be targeted to financially breakeven. Taking into consideration this feedback, the following financial analysis will be based on this threshold. In doing so, it is acknowledged there are risks. A brewery would need to capture more than 15% of the market share in northern BC

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[16] Based on personal communication with Chuck Hallet, author of the Barley Mowat blog, Alan Dikty, President of Allied Beverage Tanks Inc. in Chicago, Illinois, Graham With, Head Brewer of Parallel 49 Brewing in Vancouver, BC and is supported by Sound Brewing Systems of Olympia, Washington.

(26% is required for 2,000 hL). If this could not be achieved, alternate sales channels for product would be required. This may include increased reliance on securing market share outside of northern BC or on an international basis as done by industry competitors. The latter is already a strategy being used by Pacific Western Brewing in Prince George and Phillips Brewing in Victoria.

Producing 2,000 hL per year potentially places a new brewery in a situation where it is unable to sell all of the product it creates. This may create waste associated costs by producing too much beer and being unable to sell it before it expires. Conversely, there are also costs incurred by operating below a breakeven level, or having insufficient capacity to supply market demand. Clearly, there are costs and benefits to producing 2,000 hL for a craft brewery operating in northern BC. This said, the benefit of the brewing equipment selected is its high degree of flexibility. As such, if actual market demand is more or less than anticipated, production can be easily scaled to achieve the desired output. Based on the brewing equipment discussed in Section 3.5.2, the total amount of beer output could be quadrupled to 8,000 hL per year. This would ensure that the craft brewery could grow its sales over the short to medium term, without requiring a complete change-over in equipment (often referred to as growing out of business by industry experts).

Table 10 – Production Forecast

Production Volume (hectolitres)			
Product	Year 1	Year 2	Year 3
Packaged	1,801	1,981	2,179
Draft	200	220	242
	2,001	2,201	2,421

The production forecast for the hypothetical brewery discussed in this report is presented in Table 10. Annual growth is projected to be 10% over a three year period, which is considered a conservative estimate. Growth rate determination is further discussed in

Section 3.6.4 as part of pro forma income statement projections for this project. It is important to note that applicable provincial and federal tax rates will remain constant at these production thresholds. As such, there are no implications for the following sales projection related to increasing tax rates.

3.6.3 *Sales Forecast*

The potential revenues generated from a craft brewery operating in northwestern BC are $985,903. This is based on factors identified in Table 11 and sample calculations developed by the Costing and Pricing Department of the Liquor Distribution Branch (Appendix Figure 4 and 5). Important considerations for this sales forecast include:

- Provincial and federal tax thresholds are based on 2,001 hL of annual production and are subject to change as brewery outputs increase. The production amount of 2,001 hL was selected to provide a conservative basis for estimating federal excise duty, recognizing that this tax doubles once more than 2,000 hL are produced annually (Table 2).
- Retail prices for packaged product ($12 per 6 pack) are based on prices set by craft breweries currently selling beer in BC. These prices were derived from the BC Liquor Store Product Guide, December 2013 to January 2014 and are presented in Appendix Table 1. The prices for product sold in 0.355 L cans were used for the sales forecast as the brewery discussed in this report will also sell its packaged product in cans.
- The draft product prices ($224 per 50 L keg) are based on prices gathered from craft breweries as of February 2014. In all cases, these prices were available on the company's website.

Based on the sales forecasts $985,903, this places the brewery discussed in this report within the top revenue quartile for breweries in BC with revenues up to $5 million annually.

The sales forecasts for this study are based on a number of factors, some of which are actual and others are assumed. Actual costs include the various tax rates at the provincial and federal levels. Assumed revenues include the ability to sell 2,001 hL of beer per year, 90% of which will be sold in packages (0.335 L cans) and 10% sold in draft form (50 L kegs) (Table 11).

Table 11 - Sales Forecast for a Brewery Producing 2,001 hL of Beer Annually

[redacted]	
Prime cost (6 cans @ 0.355 litre/can = 2.13 L)	$7.92
federal duty @ $0.0624/litre	$0.13
provincial mark-up @ $0.97/litre	$2.07
container recycling fee ($0.10/can)	$0.60
retail price	$10.71
PST @ 7%	$0.75
GST @ 5%	$0.54
sales price	$12.00
retail price per litre ($10.71/2.13L)	$5.03
total revene for 1801 hL (@ $5.03/litre)	$905,903
[redacted]	
Prime cost (50L keg)	$163.38
federal duty @ $0.0624/litre	$3.12
provincial mark-up @ $0.67/litre	$33.50
retail price	$200.00
PST @ 7%	$14.00
GST @ 5%	$10.00
sales price	$224.00
retail price per litre ($200/50L)	$4.00
total revenue for 200 hL (@ $4/litre)	$80,000
[redacted]	

3.6.4 *Pro Forma Income Statement*

An income statement is a "statement of revenues and expenses for a particular period, leading to the calculation of net income or net profit" (Kothari & Barone, 2006, p. 385). The following income statement includes the first three years of production based on the sales forecast discussed in Section 3.6.3. A percentage of revenues approach was used to calculate each item within the income statement. These percentages are based on the average 2010 and 2011 SME benchmarking data for breweries operating in BC. Recalling that this information is based on actual tax returns, this data is of high quality, but unfortunately several years out of date. When using this data, it was important to recognize that it is derived mainly from breweries on Vancouver Island and the Lower Mainland regions as this is where the majority of breweries operate. As such, some revenue percentages were adjusted to more closely reflect market conditions in northwest BC and the brewery discussed in this report. The main items that were adjusted include:

1. **Lower rental costs.** Lease costs were lowered by a third, from 4.95% to 3.32% of revenue. This reflects the lower building rental rates in northern versus southern BC. For example, light and medium industrial space leases for approximately $20 per square foot per year in Victoria or Vancouver, whereas it is much lower in northwest BC at $12 per square foot per year. This information is based on conversations with Chuck Hallett, craft beer writer in BC and a realtor in northern BC who desired to remain anonymous[17].
2. **Higher distribution costs.** Distribution was adjusted to a higher percent of revenue from 0.05% to 3% of revenue. This reflects a 60 fold increase from the average distribution costs for BC breweries in 2010 and 2011, but it is believed to more accurately reflect the costs to hire private distributors to sell the draft and packaged product discussed in this report. For example, at 0.05% of year 1 revenue ($985,903), distribution costs would equal $493. This value is not considered reasonable, even for market conditions in southern BC.

[17] These costs are triple net based on a 4,000 square foot building. This means costs include property tax, insurance and maintenance. Actual costs may vary depending on factor such as ceiling height, doors and door height, loading docks, electrical services, office space and the age and quality of the building.

3. **Lower repairs and maintenance.** Repairs and maintenance were lowered from 1.65% to 0.89%. As the brewery discussed in this report will use new equipment, it will have a lower upkeep and repair costs on average, at least for the first three years of operation.

It is important to note that the 10% growth rate selected for the income statement in Table 12 is conservatively based on the current market growth rate within the BC craft beer industry. As presented in Table 1, the actual growth rate for packaged craft beer has been considerably higher, up to 47% growth in retail sales from 2012 to 2013. The sustainability of such high growth rates is questionable, however, and 10% per annum is deemed to have a lower level of risk and more appropriate for conservative financial planning.

Table 12 – Pro Forma Income Statement for Brewery producing 2,001 hL Annually

REVENUES AND EXPENSES	% of Revenues	YR1 ($)	YR2 ($)	YR3 ($)	Growth rate
Total revenue	100.00	985,903	1,084,493	1,192,943	
Sales of goods and services	99.80	983,931	1,082,324	1,190,557	10%
All other revenues	0.20	1,972	2,169	2,386	10%
Cost of sales (direct expenses)	52.45	517,106	568,817	625,698	10%
Wages and benefits	17.85	175,984	193,582	212,940	10%
Purchases, materials and sub-contracts	35.65	351,474	386,622	425,284	10%
Opening Inventory	9.30	91,689	100,858	110,944	10%
Closing inventory	10.35	102,041	112,245	123,470	10%
Operating expenses (indirect expenses)	45.81	451,642	478,311	507,646	
Labour and commissions	15.90	156,759	172,434	189,678	10%
Amortization and depletion	4.00	39,436	39,436	39,436	0%
Repairs and maintenance	0.89	8,775	8,775	8,775	0%
Utilities and telephone/telecommunication	1.95	19,225	21,148	23,262	10%
Rent	3.32	32,732	32,732	32,732	0%
Interest and bank charges	1.20	11,831	11,831	11,831	0%
Professional and business fees	1.00	9,859	9,859	9,859	0%
Advertising and promotion	7.70	75,915	75,915	75,915	0%
Delivery, shipping and warehouse expenses	3.00	29,577	32,535	35,788	10%
Insurance	0.65	6,408	6,408	6,408	0%
Other expenses	6.20	61,126	67,239	73,962	10%
Total expenses	98.26	968,748	1,047,128	1,133,345	
Net profit/loss	1.74	**$17,155**	**$37,366**	**$59,598**	

The income statement for the craft brewery discussed in this report indicates that a profit is possible given the revenues and expense amounts identified in Table 12. Moreover, revenues are capable of growing at a faster rate than expenses, which is attractive for new business owners. There are three possible uses for the net profit; this money may be plowed back into the firm as retained earnings, it could be paid out as dividends, or a combination of both options. This study applied net income toward retained earnings to increase the owner's equity stake in the firm, as identified in the pro forma balance sheet in Table 13.

3.6.5 *Pro Forma Balance Sheet*

A balance sheet is often required within a business plan as it contains a statement of the assets, liabilities and capital of a company at a specified date. If differs from an income statement which presents transactions over a specified period of time. The structure of a balance sheet forms the basis for double-entry bookkeeping, where assets are always equal to liabilities of the firm plus the owner's equity (Kothari & Barone, 2006).

Similar to the income statement presented in Section 3.6.4, SME benchmarking data for 2010 and 2011 was used to develop a balance sheet for the brewery discussed in this report. As the SME dataset provides balance sheet items in dollar amounts, these values were converted to percentages and multiplied by the known fixed asset costs of $297,996 to develop the balance sheet presented in Table 13. This fixed asset costs is based on a quote provided by an industry supplier as presented in itemized detail in Appendix Table 3. As an exception, the percentage for asset item "other current assets" was not multiplied by the known fixed asset cost. Instead, this item was used as a plug variable to offset the high levels of negative equity carried by BC breweries as presented in Appendix Table 6 and Appendix

Table 7. This step was required to ensure the brewery discussed in this report did not begin with negative equity and to ensure that net assets equaled net liabilities plus equity.

Table 13 – Pro Forma Balance Sheet for Brewery Producing 2,001 hL Annually

BALANCE SHEET	% of total	YR0 ($)	YR1 ($)	YR2 ($)	YR3 ($)	Growth rate
Total assets	100.00	645,153	685,828	730,095	778,301	10%
Total current assets	52.91	341,350	375,485	413,034	454,337	10%
Accounts receivable	20.29	130,901	143,992	158,391	174,230	10%
Closing inventory	18.85	121,611	133,772	147,150	161,865	10%
Other current assets	variable	88,838	97,721	107,493	118,243	10%
Net fixed assets	46.19	297,996	303,956	310,035	316,236	2%
Other assets and adjustments	0.90	5,806	6,387	7,026	7,728	10%
Total liabilities	100.00	645,153	668,674	675,574	664,183	
Total current liabilities	26.78	172,772	196,293	203,193	191,802	
Current bank loans	0.42	2,710	9,224	-2,582	-34,551	
Other current liabilities	26.36	170,062	187,068	205,775	226,353	10%
Long term liabilities	73.22	472,381	472,381	472,381	472,381	0%
Total equity	0.00	0	17,155	54,520	114,118	

Consistent with the income statement, a 10% growth rate was applied to most balance sheet items. As an exception, a 2% growth rate was applied to net fixed assets, recognizing this report proposes installing new brewing equipment, and significant infrastructure or upgrades should not be required in the short term. Further, growth in total equity from year 1 to 3 represents the additions from net income for these periods. While long term liabilities were set to a zero growth rate, paying off long term debt should also be a priority for the brewery discussed in this report. Paying off debt is an important management decision for any firm to ensure it adheres to its capital structure targets (Ross et al., 2007).

As noted by several brewery equipment suppliers, debt is a major issue facing small breweries and is a key factor contributing to their demise if managed poorly. A review of tax submissions for breweries in BC in 2010 and 2011 indicates that these businesses are carrying high levels of debt and owners have negative equity (Appendix Table 6 and Appendix Table 7). This means that the majority of breweries have outstanding loan balances which exceed the value of their assets. Such situations increase risk exposure to these firms and threaten their continued operation should they experience unplanned revenue disruptions or cost overruns. For the craft brewery discussed in this report, it is recommended that sufficient equity financing is acquired to shelter this business from the aforementioned financial uncertainties.

3.6.6 *Source and Use of Funds*

A source and use of funds statement identifies changes in a firm's financial position from one period to the next. Other names for this analysis include a flow of funds statement or a statement of changes in financial position (Kuhlemeyer & Waukesha, 2004). While audited financial statements now use a Cash Flow Statement in place of the source and use of funds method, it is still a helpful technique as it is easy to prepare and includes non-cash transactions which are not included in the cash flow statement.

Based on the balance sheet projections presented in Section 3.6.5, the following table identifies the major sources and uses of funds for the craft brewery discussed in this report. It is clear that the current liabilities (liabilities that will be paid within a year) and retained earnings are the primary sources of cash while accounts receivable and inventory are consistently the largest uses of cash.

Table 14 – Source and Use of Funds Statement

	YR1 - YR0 ($)		YR2 - YR1 ($)		YR3 - YR2 ($)
SOURCES		SOURCES		SOURCES	
Current bank loans	6,515	Other current liabilities	18,707	Other current liabilities	20,578
Other current liabilities	17,006	Equity (net income)	37,366	Equity (net income)	59,598
Equity (net income)	17,155	Total sources	56,073	Total sources	80,175
Total sources	40,676				
USES		USES		USES	
Accounts receivable	13,090	Accounts receivable	14,399	Accounts receivable	15,839
Inventory	12,161	Inventory	13,377	Inventory	14,715
Other current assets	8,884	Other current assets	9,772	Other current assets	10,749
Other assets and adjustments	581	Other assets and adjustments	639	Other assets and adjustments	703
Net fixed assets	5,960	Net fixed assets	6,079	Net fixed assets	6,201
Total uses	40,676	Current bank loans	11,806	Current bank loans	31,969
		Total uses	56,073	Total uses	80,175

3.6.7 *Additional Financial Analysis*

This study sought to identify whether a new craft brewery in northwest BC could be profitable. While the income statement in Table 12 indicates that such a business could be profitable, it is important to recognize that profitability is but one method of financial analysis. Before investment decisions are finalized, it is highly recommended that a net present value analysis is undertaken (Stewart, 2009). This technique takes into consideration the future cash flows of an investment, discounted to the appropriate cost of capital, to measure the value of a new project and its ability to generate shareholder wealth.

In addition to a net present value analysis, further work could also be conducted to assess the growth rates used in this study. For example, a sensitivity analysis of the 10% sales growth rate used in this report could highlight the potential risks and opportunities for investors if this target is not met or exceeded. Such an investigation may also reveal that this rate may be appropriate for some revenue or expense variables, but unrealistic for others.

4.0 Conclusion

The intent of this report was to present a best-fit scenario for a craft brewery in northwest BC and evaluate its potential profitability. To achieve this goal, a business plan framework was used, complemented by requirements to acquire a manufacturer's license to make and sell beer in BC.

The outcomes of this project reveal that the market for craft beer in northern BC is small and is overshadowed by markets in southern BC and Vancouver Island where the majority of craft beer is made and sold. As every challenge has an opportunity, the north has only one established brewery, which leaves room for new firms to enter the industry. While this may seem attractive, regulatory policies of the provincial government combined with high capital investment and significant brewing know-how are key barriers for starting a craft brewery. This may be partially why at least a third of all breweries in BC are not profitable. Overcoming these challenges is possible, but it is crucial that sufficient financial planning is undertaken. Investigation conducted as part of this project revealed that it is possible for a craft brewery to be profitable, but if it follows the lead of other breweries in the province, this can only be achieved with high levels of debt. For example, the majority of breweries in BC owe more in debt than they possess in assets, which is analogous to owing more on your home than it is worth. To ensure that a new craft brewery will be successful and become a permanent contributor to the northern economy, careful planning must be conducted. It is hoped that the information presented in this report will help new and existing entrepreneurs take a gamble on beer manufacturing in northwest BC and win.

5.0 References

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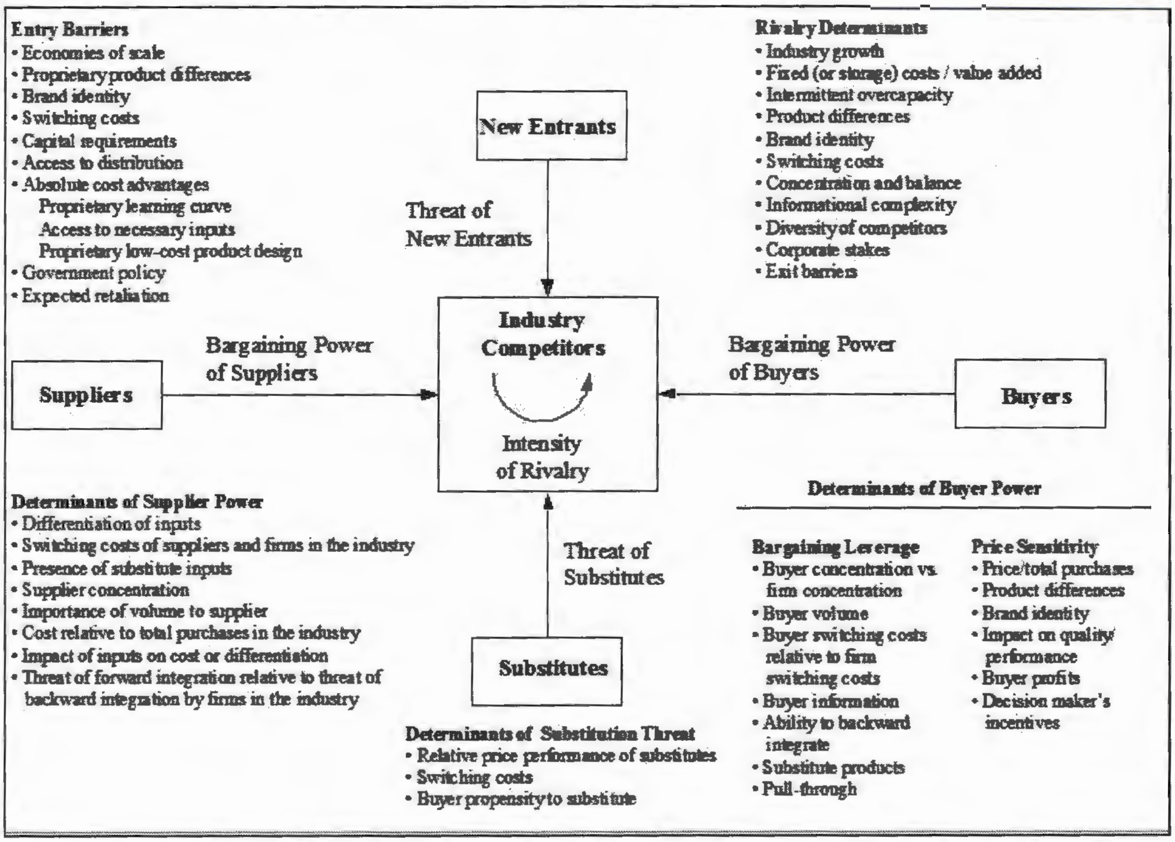
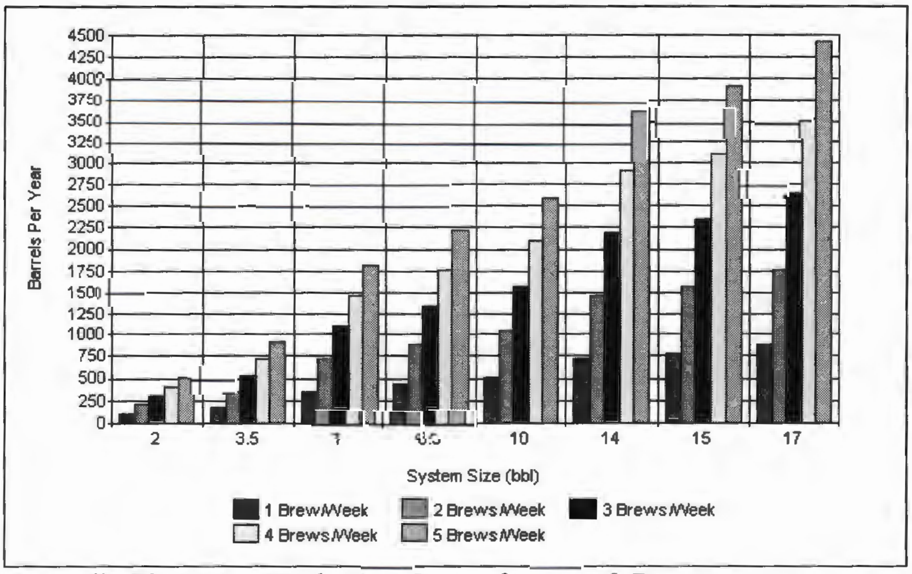
6.0 Appendix



Appendix Figure 1 – Porter's Five Forces Model Defining Industry Profitability
Source: http://wikireedia.net/wikireedia/index.php?title=Porter%27s_Five_Forces



Appendix Figure 2 – Production Range for a Craft Brewery
Source: http://specificmechanical.com/products-services/brewery-systems/system-sizing

Appendix Table 1 - Price List for BC Craft Breweries in 2014

Producer	Product	Package	Price ($)	Price per litre ($/L)
Hoyne Dark Matter	1 x 0.650L	Large bottle	5.25	8.08
Parallel 49 Red Eye Red Rye Lager	1 x 0.650L	Large bottle	6.00	9.23
R & B Brewing Red Devil Pale Ale	1 x 0.650L	Large bottle	4.95	7.62
Saltspring Golden Ale	1 x 0.650L	Large bottle	5.65	8.69
Phillips Amnesiac Double IPA	1 x 0.650L	Large bottle	5.50	8.46
		average retail price	*5.47*	*8.42*
Okanagan Spring Porter	6 x 0.341L	Regular bottle	12.25	5.99
Russell Session Series Cream Ale	6 x 0.341L	Regular bottle	10.50	5.13
Sleeman Cream Ale	6 x 0.341L	Regular bottle	12.49	6.10
Vancouver Island Piper's Pale Ale	6 x 0.341L	Regular bottle	11.99	5.86
Parallel 49 Hoparazzi India Pale Lager	6 x 0.341L	Regular bottle	12.50	6.11
		average retail price	*11.95*	*5.84*
Lighthouse Beacon IPA Can	6 x 0.355L	Regular can	11.99	5.63
Okanagan Spring Pale Ale Can	6 x 0.355L	Regular can	12.25	5.75
Nelson Paddywhack IPA Can	6 x 0.355L	Regular can	12.25	5.75
Phillips Blue Buck Ale Can	6 x 0.355L	Regular can	11.75	5.52
Pacific Western Brewing Scandal Ale Organic	6 x 0.355L	Regular can	12.49	5.86
		average retail price	*12.15*	*5.70*
		average retail price (regular cans and bottles)	12.05	5.77
Driftwood Brewing Draft	18.5L	Keg	90.00	4.86
Plan B Brewing (now out of business)	18.9L	Keg	85.00	4.50
Storm Brewing Draft	18L	Keg	153.00	8.50
Phillips Brewing Draft	19L	Keg	78.00	4.11
Hoyne Brewing Draft	20L	Keg	90.50	4.53
		average retail price	*99.30*	*5.30*
Phillips Brewing Draft	50L	Keg	180.00	3.60
Hoyne Brewing Draft	50L	Keg	206.00	4.12
Driftwood Brewing Draft	50L	Keg	205.00	4.10
Vancouver Island Brewing Draft	50L	Keg	186.00	3.72
Tree Brewing Draft	50L	Keg	197.00	3.94
		average retail price	*194.80*	*3.90*
		average retail price (20L and 50L kegs)	147.05	4.60

Notes

1 - Based on BC Liquor Store Product Guide, December 2013 to January 2014

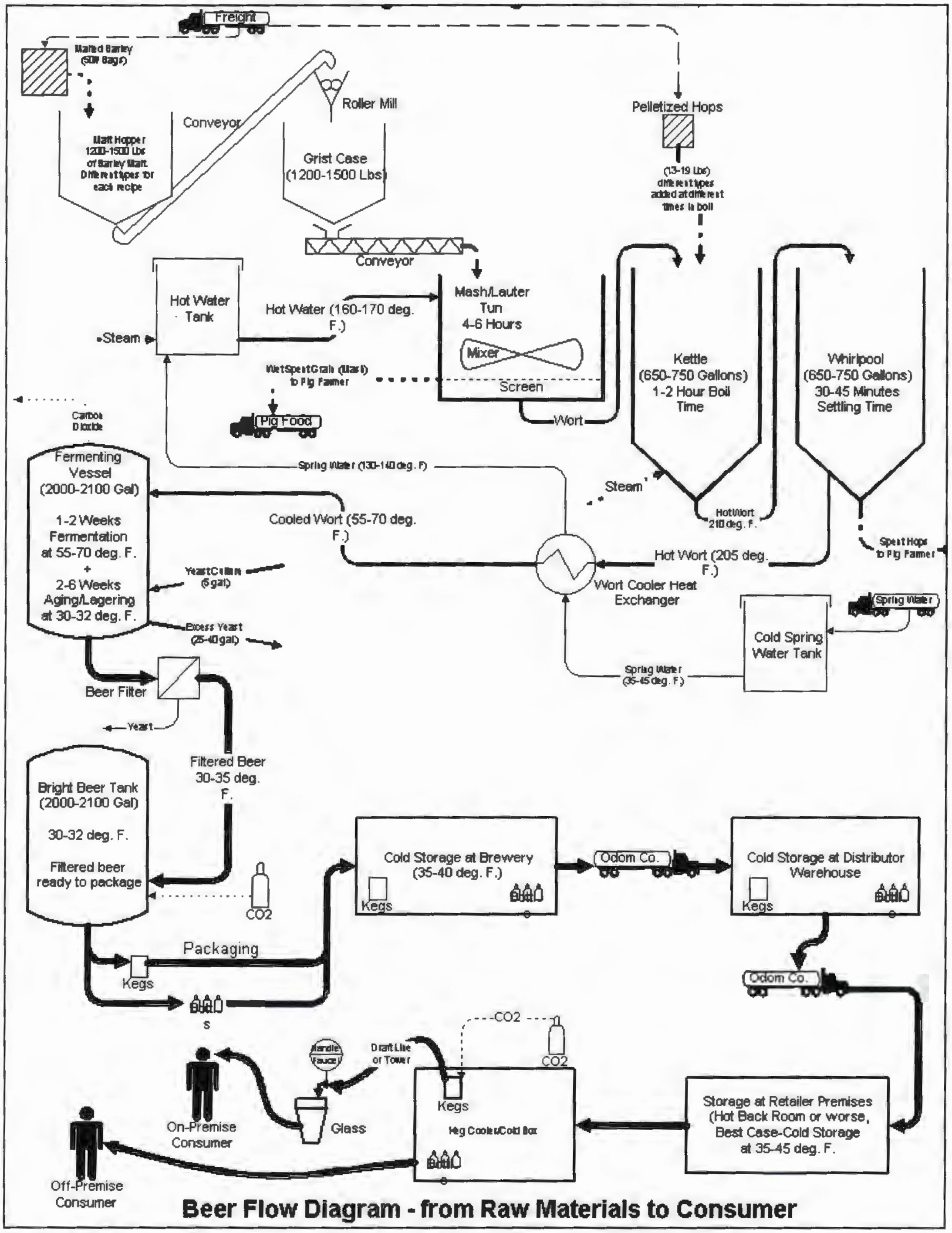
2 - Hoyne and Tree draft prices are based on an average of their price range

Appendix Table 2 - Breweries Included in LDB Custom Reports in 2012

Number	Brewery
1	AVALON BREWING CO.
2	BIG ROCK BREWERY LIMITED (WITH ALBERTA GENUINE DRAFT REMOVED)
3	CENTRAL CITY BREWING COMPANY LIMITED
4	CRANNOG ALES LTD
5	DEAD FROG BREWERY (INCLUDES BACKWOODS & STEAMWORKS)
6	DRIFTWOOD BREWING CO.
7	FIREWEED BREWING CORPORATION (INCLUDES TREE BREWING)
8	GRANVILLE ISLAND BREWING CO. LIMITED
9	GULF ISLAND BREWERY LTD.,
10	HOWE SOUND BREWING COMPANY LTD.
11	HOYNE BREWING COMPANY
12	LIGHTHOUSE BREWING CO. LTD.
13	NELSON BREWING CO.
14	NORTHAM BREWERY
15	OKANAGAN SPRING BREWERY LTD. (WITH STROH AND SAPPORO REMOVED)
16	PARALLEL 49 BREWING CO. LTD.
17	PHILLIPS BREWING CO.,
18	R & B BREWING INCORP.
19	RUSSELL BREWING COMPANY LTD.
20	STORM BREWING LTD.
21	VANCOUVER ISLAND BREWING CO.

Appendix Table 3 - Equipment Quote for a 15 Barrel Brew System

Grain handling and milling	Quantity	Cost	Total
Malt mill	1	$5,095.00	$5,095.00
Flex auger	2	$2,001.00	$4,002.00
Flex auger - unloader, boot and bearing	2	$838.00	$1,676.00
Poly grist case	1	$2,040.00	$2,040.00
Grist hydrator (with thermometer)	1	$993.00	$993.00
Water systems			
Masterbrew 30BBL Hot Liquor Tank	1	$14,190.00	$14,190.00
Hot Liquor Pump	1	$1,620.00	$1,620.00
Masterbrew 30BBL Cold Liquor Tank	1	$13,753.00	$13,753.00
Cold Liquor Pump	1	$1,620.00	$1,620.00
Brehouse equipment			
15 BBL Mash/Lauter Tun (Rakes, Underflush, WCH)	1	$34,783.00	$34,783.00
12" (300 mm) Knife Valve (Wheel)	1	$3,942.00	$3,942.00
15 BBL Steam Kettle / Whirlpool	1	$16,977.00	$16,977.00
In Line Hop Strainer (PELLETS)	1	$1,320.00	$1,320.00
Work Platform (2 vessel / 6FT)	1	$4,692.00	$4,692.00
Control Panel Mounting Bracket	1	$504.00	$504.00
15 BBL Heat Exchanger cold liquor/wort	1	$5,834.00	$5,834.00
Wort Aeration Assembly	1	$1,422.00	$1,422.00
Piping			
Piping (Manifold 2 vessels)	1	$11,341.00	$11,341.00
Liquor Blending System	1	$4,834.00	$4,834.00
Wort Pump	1	$2,441.00	$2,441.00
Kettle Pump	1	$1,648.00	$1,648.00
Brewhouse Transfer System	1	$2,630.00	$2,630.00
Control systems			
Brewhouse Control Panel (2 vessel, steam)	1	$4,667.00	$4,667.00
Vessel Mounted Temperature Controller	5	$136.00	$680.00
Peripheral equipment			
Air Cooled Packaged Glycol Chiller (67,400 BTU/HR)	1	$18,210.00	$18,210.00
HRN-15 Steam Boiler (519,750 BTU/HR)	1	$11,761.00	$11,761.00
DE Filter - 3 Sq. Meter Horizontal (Manual)	1	$18,328.00	$18,328.00
Clean in place (CIP) equipment			
Portable CIP Pump C/W VFD	1	$2,822.00	$2,822.00
Sankey III Keg washer/racker	1	$10,115.00	$10,115.00
Packaging Equipment	1	$10,115.00	$10,115.00
Tanks			
Masterbrew 30 BBL Unitank	3	$14,921.00	$44,763.00
Masterbrew 30 BBL Bright Beer Tank	1	$14,227.00	$14,227.00
Installation			
Production Brewery Installation	1	$9,951.00	$9,951.00
Estimated Freight	1	$15,000.00	$15,000.00
Pricing			
Quotation Total (CDN)			**$297,996.00**



Appendix Figure 3 - Brewing Process Diagram for a 25-28 hL Brew House
Source: Silver Gulch Brewing and Bottling Co. in Fairbanks, Alaska
(http://www.ptialaska.net/~gbrady/pages/flowdiagram.html)

Appendix Table 4 - Sample Price Calculation for Packaged Beer Sold in BC

BRITISH COLUMBIA | LIQUOR DISTRIBUTION BRANCH

SAMPLE PRICE CALCULATION *
JANUARY 2014

DOMESTIC BEER: BREWERY PRODUCTION - <= 15000 HECTOLITRES
(4 (6 X .330L), BC BEER, 5% ALCOHOL, NON-REFILLABLE GLASS)

	DISTRIBUTION CHANNEL	
	PRIVATE	LDB
PRIME COST PER CASE	$37.10	$37.10
INBOND	37.10	37.10
FEDERAL DUTY		
EXCISE @ .3122 PER LITRE	2.47	2.47
DUTY PAID COST PER CASE (Provided by Supplier and amount paid to Supplier)	39.57	39.57
DUTY PAID COST PER SELLING UNIT	9.89	9.89
VOLUME MARK-UP @ $0.00/LITRE	0.00	0.00
LDB DISTRIBUTION @ $0.10/LITRE	N/A	0.20
ADJUSTED COST	9.89	10.09
PER LITRE MARK-UP @ $0.97 / LITRE	1.92	1.92
COST OF SERVICE @ $0.00/LITRE for BC Packaged Beer	0.00	0.00
CONTAINER RECYCLING FEE @ $0.10/BOTTLE	0.60	0.60
RETAIL PRICE	12.41	12.61
PROVINCIAL SALES TAX @ 10%	1.24	1.26
GOODS AND SERVICES TAX @ 5%	0.62	0.63
DISPLAY PRICE	$ 14.27	$ 14.50

* The above is intended as a guide only.
Please refer to Mark Up Schedule and Customs Rates of Duty and Taxes for further information.

Costing and Pricing Department

Appendix Table 5 - Sample Price Calculation for Draft Beer Sold in BC

BRITISH COLUMBIA

LIQUOR DISTRIBUTION BRANCH

SAMPLE PRICE CALCULATION *
JANUARY 2014

DRAUGHT BEER
(1 LITRE PIPELINE)

PRIME COST		$10.02
FEDERAL DUTY		
	EXCISE @ .3122 PER LITRE	0.31
DUTY PAID COST		10.33
	DISTRIBUTION CHARGE @ $0.00/L	-
ADJUSTED COST		10.33
	PERCENTAGE MARK-UP @ $0.67/L	0.67
	COST OF SERVICE ADJ. @ $0.00/litre	-
	CONTAINER RECYCLING FEE N/A	-
RETAIL PRICE		11.00
	PROVINCIAL LIQUOR SALES TAX @ 10%	1.10
	GOODS AND SERVICES TAX @ 5%	0.55
DISPLAY PRICE		$ 12.65

* The above is intended as a guide only.
Please refer to Mark Up Schedule and Customs Rates of Duty and Taxes for further information.

Costing and Pricing Department

Appendix Table 6 - Financial Information for BC Breweries in 2010 (NAIC 31212)

	Whole Industry (Reliability)	Bottom Quartile (25%)	Lower Middle (25%)	Upper Middle (25%)	Top Quartile (25%)	Percent of Businesses Reporting
Number of Businesses	35					
Revenue Range:						
Low Value ($ 000)	30	30	169	304	680	
High Value ($ 000)	5000	169	304	680	5000	
REVENUES AND EXPENSES	(percent of total revenue)					
Total revenue	100.00	100.00	100.00	100.00	100.00	100.00
Sales of goods and services	99.90	99.90	99.70	100.00	99.90	100.00
All other revenues	0.10	0.10	0.30	0.00	0.10	37.10
Cost of sales (direct expenses)	43.70	41.60	36.20	46.70	44.10	97.10
Wages and benefits	10.50	2.00	4.30	6.50	12.70	42.90
Purchases, materials and sub-contracts	35.10	40.50	38.90	46.10	31.80	97.10
Opening Inventory	8.60	5.40	2.50	9.30	9.40	77.10
Closing inventory	10.50	6.20	9.40	15.30	9.80	82.90
Operating expenses (indirect expenses)	53.20	56.10	64.90	66.60	48.50	100.00
Labour and commissions	19.50	20.80	20.30	22.00	18.70	85.70
Amortization and depletion	4.90	2.20	5.90	9.10	4.00	88.60
Repairs and maintenance	1.60	1.00	1.30	1.30	1.80	94.30
Utilities and telephone/telecommunication	2.20	3.50	2.00	2.90	2.00	94.30
Rent	6.20	17.60	6.90	9.00	4.80	88.60
Interest and bank charges	1.90	0.00	3.90	4.50	1.20	88.60
Professional and business fees	2.00	1.90	9.00	2.10	1.20	97.10
Advertising and promotion	6.40	1.30	2.30	3.50	7.80	85.70
Delivery, shipping and warehouse expenses	0.10	1.10	0.50	0.00	0.10	25.70
Insurance	0.80	0.90	0.70	1.10	0.70	85.70
Other expenses	7.60	5.80	11.90	11.20	6.40	100.00
Total expenses	96.90	97.80	101.10	113.30	92.60	100.00
Net profit/loss	3.10	2.20	-1.10	-13.30	7.40	100.00
BALANCE SHEET	(thousands of dollars)					
Total assets	554.60	53.70	365.60	493.50	1305.70	
Total current assets	234.70	26.40	67.80	111.70	732.90	
Accounts receivable	74.70	4.10	7.50	20.00	267.20	
Closing inventory	81.70	8.00	9.90	67.90	240.70	
Other current assets	78.30	14.30	50.40	23.70	224.90	
Net fixed assets	295.20	27.30	297.80	291.80	563.70	
Other assets and adjustments	24.80	0.00	0.00	90.00	9.10	
Total liabilities	618.30	95.90	386.10	604.90	1386.30	
Total current liabilities	229.10	14.80	313.80	157.40	430.30	
Current bank loans	51.10	0.10	189.50	8.60	6.30	
Other current liabilities	178.00	14.70	124.40	148.80	424.00	
Long term liabilities	389.20	81.10	72.20	447.60	956.00	
Total equity	63.70	-42.10	-20.50	-111.50	-80.60	
FINANCIAL RATIOS						
Current ratio	1.00	1.80	0.20	0.70	1.70	
Debt to equity ratio	-9.70	-2.30	-18.90	-5.40	-17.20	
Interest coverage ratio	2.60	49.40	0.70	-1.90	7.20	
Debt ratio	1.10	1.80	1.10	1.20	1.10	
Revenue to equity ratio	-11.30	-3.00	-12.40	-4.10	-25.30	
Revenue to closing inventory ratio	8.80	15.80	25.60	6.70	8.50	
Current debt to equity (%)	-359.70	-35.10	-1533.00	-141.20	-533.60	
Net profit to equity (%)	-35.50	-6.70	13.80	54.30	-187.20	
Net fixed assets to equity (%)	-463.50	-64.90	-1455.00	-261.70	-698.90	
Gross margin (%)	56.30	58.30	63.60	53.30	55.90	
Return on total assets (%)	6.50	5.40	1.90	-8.10	13.40	
Collection period for accounts receivable (days)	37.90	11.80	10.80	16.00	47.80	

Appendix Table 7 - Financial Information for BC Breweries in 2011 (NAIC 31212)

	Whole Industry (Reliability)	Bottom Quartile (25%)	Lower Middle (25%)	Upper Middle (25%)	Top Quartile (25%)	Percent of Businesses Reporting
Number of Businesses	33					
Revenue Range:						
Low Value ($ 000)	30	30	156	292	852	
High Value ($ 000)	5000	156	292	852	5000	
REVENUES AND EXPENSES	(percent of total revenue)					
Total revenue	100.00	100.00	100.00	100.00	100.00	100.00
Sales of goods and services	99.80	100.00	100.00	100.00	99.70	100.00
All other revenues	0.20	0.00	0.00	0.00	0.30	27.30
Cost of sales (direct expenses)	56.90	43.30	41.20	50.20	60.80	100.00
Wages and benefits	19.40	6.00	11.80	10.40	23.00	63.60
Purchases, materials and sub-contracts	40.30	39.30	28.50	49.50	39.50	100.00
Opening Inventory	7.90	5.00	7.00	3.40	9.20	78.80
Closing inventory	10.70	7.00	6.10	13.10	10.90	84.80
Operating expenses (indirect expenses)	44.40	60.00	56.10	46.50	41.90	100.00
Labour and commissions	14.20	15.90	18.10	16.70	13.10	72.70
Amortization and depletion	3.60	2.20	3.70	2.00	4.00	90.90
Repairs and maintenance	1.40	1.20	1.50	0.80	1.50	90.90
Utilities and telephone/telecommunication	2.10	4.30	2.70	2.10	1.90	97.00
Rent	6.80	19.80	6.40	11.70	5.10	90.90
Interest and bank charges	1.10	0.80	1.20	0.60	1.20	81.80
Professional and business fees	1.00	2.90	1.60	1.30	0.80	97.00
Advertising and promotion	6.40	2.10	3.30	3.30	7.60	97.00
Delivery, shipping and warehouse expenses	0.10	1.30	0.20	0.00	0.00	33.30
Insurance	0.70	1.60	0.90	1.00	0.60	84.80
Other expenses	7.00	7.80	16.20	6.90	6.00	100.00
Total expenses	101.30	103.30	97.30	96.70	102.70	100.00
Net profit/loss	1.30	-3.30	2.70	3.30	-2.70	100.00
BALANCE SHEET	(thousands of dollars)					
Total assets	477.90	58.40	339.60	265.70	1247.90	
Total current assets	199.50	23.70	77.50	78.40	618.20	
Accounts receivable	69.70	5.40	17.30	5.30	250.90	
Closing inventory	82.10	7.10	33.20	47.60	240.70	
Other current assets	47.60	11.20	27.10	25.60	126.60	
Net fixed assets	245.60	34.70	262.10	69.70	615.80	
Other assets and adjustments	32.90	0.00	0.00	117.50	13.90	
Total liabilities	764.90	123.80	330.80	398.90	2206.00	
Total current liabilities	231.20	20.10	104.20	115.60	684.90	
Current bank loans	5.10	0.30	15.90	0.00	4.30	
Other current liabilities	226.00	19.70	88.30	115.60	680.50	
Long term liabilities	533.70	103.70	226.60	283.30	1521.20	
Total equity	287.00	-65.40	8.80	-133.20	-958.10	
FINANCIAL RATIOS						
Current ratio	0.90	1.20	0.70	0.70	0.90	
Debt to equity ratio	-2.70	-1.90	37.60	-3.00	-2.30	
Interest coverage ratio	-0.10	-3.00	3.20	6.30	-1.10	
Debt ratio	1.60	2.10	1.00	1.50	1.80	
Revenue to equity ratio	-2.70	-1.70	27.50	-3.90	-2.30	
Revenue to closing inventory ratio	9.40	15.40	7.30	10.80	9.20	
Current debt to equity (%)	-80.60	-30.70	1184.30	-86.80	-71.50	
Net profit to equity (%)	3.40	5.50	74.10	-12.60	6.10	
Net fixed assets to equity (%)	-85.60	-53.00	2978.80	-52.30	-64.30	
Gross margin (%)	43.00	56.70	58.80	49.70	39.00	
Return on total assets (%)	-0.20	-4.70	2.80	7.50	-2.50	
Collection period for accounts receivable (days)	33.10	18.00	26.00	3.70	41.40	