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Sierra Nevada Brewing Company:
Pioneering Craft Beer in America

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Sierra Nevada Brewing Company: Pioneering Craft Beer in America

Connor Deck, Josh Heinicke, Michael Hoo and Bianca Ramirez prepared this case under the supervision of Dr. Wayne Howard in AGB 462 Applied Agribusiness Problems as the basis for class discussion rather than to illustrate either effective or ineffective management.

Ken Grossman

A Passionate Home Brewer

The mission of Sierra Nevada Brewing Company, as stated by owner and CEO Ken Grossman, is to “... brew beers that we love to drink.” Sierra Nevada Brewery started bottling and selling their Pale Ale in 1981, but the brewery really dates from 1969, when Ken, still a teenager, developed a fascination with the brewing process of beer, wine, and sake, and began to experiment with home brewing. Moreover, he was too young to buy beer, so instead he made his own. These early home brews were made with the “... tacit approval of my Mom and help from my friends who were all willing tasters, ...”.

After graduating from high school, Ken planned a celebratory bike trip from Novato to Santa Cruz. Two things happened because of this trip. First, to get from his home near Los Angeles to Novato, just north of San Francisco, he caught a ride with friends who were moving to Chico to go to college. He immediately fell in love with the town and decided to move there. Second, on his bike trip he had his first Anchor Steam beer. Unlike most American beers at the time, Anchor Steam had lots of hops and malt flavor. Ken was inspired; a beer he would like to brew himself.

Ken loved Chico, loved to learn how things worked and new skills, but was not interested in formal schooling. He took a mix of classes at the local community college, from welding to refrigeration, while working at a local bike shop. Starting as a part-time bike mechanic, he honed his business skills by becoming the bike shop manager. All the while he refined his beer brewing skills.

As Ken’s knowledge of home brewing increased, he noted an increasing interest in home brewing among others. In 1976 he opened “The Home Brew Shop” in downtown Chico. However, Ken ran across a small problem while trying to improve the qualities of his home brews. In the 1970s, it was difficult to find hops for home brewing and those that were available were of low quality. To solve this problem
Ken went to Yakima, WA, and persuaded hop brokers to sell him 100 pounds of “brewer’s cuts” high quality hops. With his supply of high quality hops established, Ken thought to change his business from a home brew shop to brewing and bottling his own beer. With his experience and knowledge of brewing, and a consistent supply of high quality hops, it seemed a natural transition from home brewer to commercial production; Sierra Nevada Brewing Company was founded in 1979 by Ken and business partner Paul Camusi.¹

**Beer Brewing in America**

*Beer History*

Beer has been drunk in the United States since at least 1620. According to the diary of a passenger aboard the Mayflower, the Pilgrims had to stop in Plymouth because their beer and other supplies were running low.² Beer was primarily a regional activity, with immigrants’ heritage influencing the type of beer brewed. These regional breweries were set back by the National Prohibition Act, which made producing and selling all alcoholic beverages illegal in the United States in 1920. Many of the breweries that were in business before this act did not survive the 13-year prohibition period. When the National Prohibition Act was repealed in 1933, the number of breweries still in business was miniscule. Once it was again legal to produce and sell alcohol, many American’s decided to open breweries and the total number rose dramatically. This rise in the number of breweries developed the need for more regulation and the Federal Alcohol Administration Act was put into effect to set-up a three-tiered system of brewer, distributor, and retailer, which holds true today. The increase in breweries was met with an increasing demand for beer throughout the United States. Due to many breweries taking on niche projects to earn a profit during the prohibition period, it was difficult for brewers to increase their production to meet the demand. This allowed many small local brewers to fulfill the demand, because it took larger breweries more time to update their methods to meet the changing demands.³

As the acceptance for alcohol reemerged, major brewing companies across the country enjoyed steady growth in the U.S without much innovation. The growth lasted until about 2005, when the U.S. market appeared to reach its limit. This slowing growth in sales required companies to discover new markets to maintain their annual growth. These brewers looked to international markets, causing development of global portfolios; yet, the global market was becoming satisfied as well.

*Craft Beer History*

Craft brewers have enjoyed growth, however not on the same scale as the larger multinational brewers. Many local brewers were experimenting with different ingredients and production methods to capture the interest of a variety of beer drinkers. The mature market facing the industry giants such as Miller Coors and Anheuser-Busch opened the door for regional craft brewers to explore new markets and satisfy a bored customer.

So what exactly is craft beer? Craft beer is basically a term to describe beer that is made by a “small, independent” brewer. The Brewers’ Association defines craft brewers as being:

- Small (Annual production of 6 million barrels of beer or less)
- Independent (Less than 25% of the craft brewery is owned or controlled by an alcoholic beverage industry member who is not themselves a craft brewer)
• Traditional (an all malt flagship or at least 50% of its volume in either all malt beers or in beers which use adjuncts to enhance flavor)⁴

A few factors really helped the Craft brewing industry become established and to expand. First is that many home brewers were making their own beer in garages or basements. As these people got better at making beer, they decided to create a business out of it. The majority of these brewers failed in the business world due to the hard transition from producing buckets to producing barrels of beer. This coupled with producing the correct quantity in order to be profitable and competitive while also maintaining the positive characteristics of their craft beer caused difficulties for many upcoming craft brewers. The major issue with this transition was that many of the entrepreneurs that started new breweries were great brew masters but lousy business managers; therefore their business never had hope of success. While many breweries did fail, there have been a handful of breweries that have succeeded in both aspects.

Second is that beer was always considered a beverage for the middle class, while wine was more for the upper class. As more and more people became educated, their need to be sophisticated increased. While wine was still the drink of choice for older consumers, craft beer gained in popularity because many young, educated people right out of college, preferred beer to wine. Craft brewers were paying more attention to the quality and the development of their own beer rather than volume, which helped change the demographic of beer drinkers. The idea of drinking something original is appealing to many consumers. These same people like stories and connection. If the beer can create a connection on a more personal level, more people will be willing to indulge in the product.⁵

Under the craft beer industry there are four different sectors of the industry in which all craft beer breweries are classified with. These include microbreweries, brewpubs, regional craft breweries, and contract brewing companies.

The first and smallest sector consists of microbreweries. These are breweries that produce less than 15,000 barrels of beer a year and sells at least 75% of their beer off-site. Their three sales channels include the traditional three-tier system, moving product from the brewer to a wholesaler to a retailer to a consumer; the two-tier system, in which the brewer wholesales directly to a retailer and hence to the consumer; and lastly to sell their beer on-site in a restaurant or tap-room as well as “carry out” sales.⁶

Second, brewpubs are very similar to a microbrewery but sell a minimum 25% of its beer onsite an on-site restaurant or tap-room. They can also sell “carry out” or distribute it to an off-site account. However, if they 75% of their beer sales off-site then the Brewers Association can re-categorize the company as a microbrewery.⁷

Third are regional craft breweries, which produce between 15,000 and 6 million barrels, are independent (i.e., not a subsidiary of a multi-national brewer) and produce only beer or have a minimum of 50% of its production in beer or malt beer, which uses additions to enhance the flavor.

The last sector is so called contract brewers. Basically, contract brewers are hired by another company to make beer. It can also be when a brewery hires another brewery to make additional beer. The company doing the hiring handles all marketing, sales, and distribution of the beer, while the hired brewery handles production and packaging of the beer.
Current Industry Overview

As of March 2013 there were 2,360 craft breweries in United States with new operations opening every day. While premium and sub premium brands such as Budweiser, Coors Light, and Natural Light have seen declining sales in recent years, craft beers have seen substantial growth. Five of the ten fastest growing beer brands in the United States are craft beers: Dale’s Pale Ale, Lagunitas IPA, New Belgium Ranger IPA, Shiner Light, and Sierra Nevada’s Torpedo Extra IPA. Recent consumer demand for extreme flavor and high-alcohol content has driven the growth in the craft beer industry. With excess demand for their product, many of America’s larger craft brewers are expanding, adding second production centers in east coast areas: Sierra Nevada is opening a second brewery in Mills River, North Carolina and New Belgium and Lagunitas are expanding into Asheville, North Carolina and Chicago respectively.

The three largest craft breweries in the United States are the Boston Beer Company, Sierra Nevada Brewing Co., and New Belgium Brewing Company. Estimated annual sales revenue for each brewery in 2012 was $580.2 million, $47 million, and $46 million respectively. To put these numbers into perspective, brewery giant Anheuser Busch estimated sales revenue of $5.77 billion in 2012. While this clearly shows that large breweries still dominate the domestic beer industry there is no doubt that craft brewers have identified a niche market that holds lots of potential growth. In 2012, craft beer represented 6% of the total United States beer market and people like Ken Grossman hope there is potential for even more growth going forward. The growth of the Craft Beer Industry can be seen in Exhibit 1.

The History of Sierra Nevada

The Birth of Sierra Nevada Brewing Company

Named after the beautiful surrounding mountains, the Sierra Nevada Brewing Company was founded in 1979 by Ken Grossman and his business partner Paul Camusi. As stated in their original business plan, quality would be the most important sales draw of Sierra Nevada beer.

From its humble beginnings, Sierra Nevada had trouble finding small-scale microbrewery equipment because it simply did not exist. Ken spent months driving through rural dairy communities to find the equipment he needed. Using self-taught skills of refrigeration and welding Ken fashioned the brewery equipment he needed from scrap stainless steel tanks and other miscellaneous equipment.

The first beer Sierra Nevada brewed was a batch of American Stout in 1980. To this day Sierra Nevada still uses the same recipe. Sierra Nevada’s signature beer, the popular Pale Ale, was born after Ken spent his remaining money and countless hours perfecting its recipe in 1980. Ken continued to remain in contact with hop brokers in Yakima, WA, and he began to increasingly like the Cascade hop. This hop has pure and intense citrus-pine flavors that give Sierra Nevada Pale Ale its distinct flavor and aroma.

As demand increased in the early 1980s, it soon became clear that the original small-scale brewery could not keep up with demand. Ken tried tweaking production practices, but demand always outpaced...
supply. In order to meet the increasing demand for Sierra Nevada beer Ken traveled to Germany and obtained a 100-barrel copper brewhouse from a failing German brewer. The brewhouse was shipped piece by piece back to California, but was not installed in Sierra Nevada’s new brewery for three years due to financial restrictions.

In 1987, Ken purchased property on 20th Street in Chico to give Sierra Nevada Brewery its new home. This location is where the brewery still remains today. In 1993, Sierra Nevada reached a major production feat by producing 100,000 barrels of beer. However, even at this large volume, demand for Sierra Nevada’s Pale Ale still outpaced supply. As Ken continued to brew and Sierra Nevada continued to grow it was clear that consumers desired the beers produced by Sierra Nevada.

The brewery expanded again in 1997, boasting a 200-barrel Hupmann brewhouse. This large copper brewhouse required the original coppersmiths who built the original 100-barrel Hupmann brewhouse to come out of retirement to complete construction. This brewhouse was installed to help ramp up Sierra Nevada’s production capacities, but demand still outpaced supply. In 2005, another brewhouse was added to the brewery. Additionally, a smaller 10-barrel brewhouse was installed to conduct small scale brewing on limited release beers.

Sierra Nevada continued to prosper and grow throughout the early 2000s. In 2004, four 250-kilowatt hydrogen fuel cells were installed at the brewery to support clean energy production. In 2006, Sierra Nevada switched back to pry-off crowns on their beer bottles to provide protection against beer flavor and quality. In 2007, 10,000 individual solar panels were installed at the brewery, further showing Sierra Nevada’s dedication to clean energy production.

Perhaps Sierra Nevada’s biggest new development is the construction of a second brewery in Mills River, NC. This brewery is expected to be completed in the fall of 2014 and is regarded as one of the most technologically advanced breweries in the world. Built to provide the east coast with fresh beer and to increase overall brewing capacity, this new brewery will double Sierra Nevada’s capacity.

As Ken Grossman looks back at the humble beginnings of Sierra Nevada it is clear that he has been successful. However, success and growth come with their fair share of problems and tough decisions. While Sierra Nevada has always worked to increase production capacity, demand for Sierra Nevada beer has always outpaced supply. Also, as new craft breweries pop up every day in America the relevance and recognition of the Sierra Nevada brand remains a constant issue. Finally, with the rapid expansion has come the question can Sierra Nevada to stay true to its roots. Brewing beer that they love to drink and maintaining a close-knit company culture may become more difficult with such rapid expansion and growth. As Ken sits and looks at the current state of his company there is no doubt that these questions are foremost.

**Current Company Overview**

*The Brewing Process: A Crash Course*
Before discussing the wide variety of beers offered by Sierra Nevada it is first important to understand the basis on which these beers are built: high quality ingredients and sound production practices.

Sierra Nevada came into existence because of a desire to drink and make great beer. The general brewing process is standard across breweries. All beer starts with barley. Barley is known as the soul of the beer because the type of barley used can dictate the flavor and characteristics of the beer. Mashing the barley is the first step, which readys the barely for brewing. Malting is next, which is steeping or soaking the barely in water. Germination follows, which takes about five days. Finally kilning takes place, which gradually heats and dries the barely, turning it into malt. The malt is then mashed to expose the starches and convert them to sugar used for fermentation. This results in “wort”. The wort is strained then boiled with the addition of hops in a copper kettle. Much of the flavors, aroma and color of the beer are developed at this step. The wort is then quickly cooled and yeast is added for fermentation, which turns the sugars into alcohol. After this the beer is then “conditioned” or aged, filtered, possibly carbonated, and bottled or placed in some type of container.

A master of a craft will typically add some variation to or special twist to their product. Sierra Nevada is no different. The first special twist at Sierra Nevada is that each batch of beer is fermented using the same identical yeast. Yeast is said to make up 50% of the flavor of the beer. By always using the same yeast, Sierra Nevada can ensure a consistent product to the consumer. Secondly, Sierra Nevada uses a hydrating malt mill to crack the barely used in their beer. This mill is one of only a handful in the United States. Most mills are dry; the fact that Sierra Nevada hydrates while they crack their barley helps ensure the husk stays intact to the barley. This again ensures a uniform high quality product. One of the most distinguishable variations that Sierra Nevada includes is the use of their “Torpedo”. The torpedo is a stainless steel cylinder which is filled with hops. The container is then hooked up to conditioning beer, which is pumped through the cylinder. Because the beer is cold when this is happening there is no bitterness added to the beer, which is typically associated with hops. Hops can add unique aromas and flavors depending on the hop origin and variety. For an image of the torpedo refer to Exhibit 2.

The whole cone Cascade hop is the foundation for all beers brewed by Sierra Nevada. In the early 20th century European hops had been considered higher quality than their North American counterparts. This changed with the USDA Aroma Hop Program and the development of the Cascade hop in 1971. The release of this groundbreaking hop aligned with the American craft brewing movement and is the reason that Sierra Nevada has such a distinct, high quality flavor. While the brewing process is tweaked for each beer they brew, the basis of ingredients and recipe stays the same.

**Beers Offered**

**Sierra Nevada Pale Ale**

This beer is Sierra Nevada’s flagship product, representing about 70% of the beer produced at Sierra Nevada’s Chico brewery. It dates from 1980, when Ken Grossman dedicated a large amount of time and money to perfecting its recipe. Its ingredients include ale yeast, Magnum hops, Perle hops, Cascade hops, two-row pale malt, and caramel malt. It has a 5.6% alcohol content by volume, contains 38
bitterness units\(^1\), and pairs well with steak, citrus salads, curry, and roasted vegetables. As Sierra Nevada continues to grow, they expect Pale Ale will continue to be the majority of what is produced at both of its breweries.\(^2\)

**Other Year Round Beers**

Alongside their Pale Ale, Sierra Nevada offers five other beers year round: Torpedo Extra IPA; Porter; Kellerweis Hefewizen; Stout; and Old Chico Crystal Wheat. Torpedo gets its name because it is brewed using a “Hop Torpedo\(^2\).” It is an aggressive beer featuring hop aromas of citrus, pine, and tropical fruit. It has 7.2% alcohol by volume, boasts 65 bitterness units and pairs well with lamb, duck, and aged cheddar. Sierra Nevada’s second year round offering is their Porter, a darker beer featuring a depth of malt flavor and hints of black coffee and cocoa. Porter has 5.6% alcohol by volume, 32 bitterness units, and pairs well with prime rib, dark chocolate, and blackened seafood. Next is Sierra Nevada’s Kellerweis, an unfiltered hefewizen or wheat ale, which is a lighter beer brewed using traditional Bavarian techniques. It is brewed in open fermentation tanks and boasts a fruity aroma and hints of cloves and banana bread. It has 4.8% alcohol by volume, 15 bitterness units, and pairs well with fruit salad, grilled salmon, and Brie cheese. Sierra Nevada’s fourth year round offering is their Stout, the first brewed by Sierra Nevada. Its recipe has not changed over the past 30 years. Sierra Nevada’s Stout has 5.8% alcohol by volume, 50 bitterness units, and pairs well with oysters, salami, and ginger snap cookies. Sierra Nevada’s final year round offering is their Old Chico Brand beer. This crystal wheat beer is Sierra Nevada’s lightest offering and is only sold in Northern California.\(^2\) These year round offering are listed in Exhibit 3.

**Seasonal Beers**

Alongside their year round offerings Sierra Nevada also offers many seasonal beers, produced to fit with specific seasons and different times of year. Their seasonal offerings include: Ruthless Rye, Summerfest, Tumbler, Flipside Red IPA, and Celebration. Ruthless Rye is a seasonal brew meant for winter. Rye added during the brewing process gives this IPA a rugged and refined flavor. Ruthless Rye has 6.6% alcohol by volume, boasts 55 bitterness units and pairs well with roasted potatoes, prosciutto, and asiago cheese. Sierra Nevada’s next seasonal brew is Summerfest, a summertime beer and the only lager brewed by Sierra Nevada. It has a 5.0% alcohol by volume, 28 bitterness units, and pairs well with grilled chicken, sushi, and lightly spiced sausages. Sierra Nevada’s third seasonal beer is Tumbler, which is a classic brown ale meant for the season of autumn. This brown ale has 5.5% alcohol by volume, 37 bitterness units, and pairs well with baked ham, smoked salmon, and gouda cheese. As the warm season

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\(^1\) Bitterness of beer is determined using the industry standard referred to as International Bitterness Units (IBUs). One part per million of the primary bitter resin found in hops called Isohumulone, or Alpha acid in beer is equivalent to one IBU. Most domestic lagers are 10 IBUs or less and some of the hoppiest beers have been measured in the 70s or higher.

\(^2\) A hop torpedo is a revolutionary dry-hopping device that controls how much hop aroma is imparted in to beer without adding additional bitterness. The Torpedo is a stainless steel device packed with whole-cone hops and sealed against pressure. Fermenting beer is circulated out of a fermenter, through the column of hops, and back into the fermentation tank. Using a Torpedo allows the maximum amount of hops to come into contact with the fermenting beer; something that is not always achieved using dry hopping techniques.
of summer fades to the cooler season of fall Sierra Nevada releases their Flipside Red IPA, with a ruby red hue and abundant tropical fruit and citrus aromas. Flipside has 6.2% alcohol by volume, 60 bitterness units and pairs well with steak fajitas and caramel based desserts. Sierra Nevada’s final seasonal offering is Celebration Ale. Released around the winter holidays Celebration Ale is one of the earliest examples of an American-style IPA. It has 6.8% alcohol by volume, 65 bitterness units, and pairs well with roasted turkey, polenta, and grilled vegetables.

**Limited Release and Experimental Beers**

Sierra Nevada continues to produce experimental brews for a variety of reasons: to see what trends may be emerging, to engage beer connoisseurs or just for play. Three recent experimental beers were Hoptimum, Narwhal Imperial Stout and Bigfoot Ale. These beers were termed Sierra Nevada’s High Altitude series, primarily due to high alcohol and BUs. Hoptimum is biggest and most intense IPA offered by Sierra Nevada. It has 10.4% alcohol, 100 bitterness units, and pairs well with vanilla ice cream and aged Monterey jack cheese. Next is the Narwhal, a stout that has 10.2% alcohol by volume, 60 bitterness units, and pairs well with chocolate mousse and Gorgonzola cheese. Lastly, Bigfoot Ale is a barley-wine style ale that can age like wine in the proper conditions. It has 9.6% alcohol by volume, 90 bitterness units and pairs well with bread pudding and blue cheese. Each new release is vintage dated by Sierra Nevada and are sought out by beer collectors for its ability to be kept in a cellar.

Other beers Sierra has experimented with over the years include: Estate, 6.7% alcohol by volume, and 67 bitterness units; DevEstatetion, a black IPA with 6.7% alcohol; Ovila Abbey Ale, a collaboration between Sierra Nevada Brewing Co. and the monks of the Abbey of New Clairvaux, has 10.2% alcohol by volume, and 21 bitterness units; and Southern Hemisphere Harvest, which features New Zealand hops, has 6.7% alcohol by volume, and 67 bitterness units.

Common to all these beers are higher alcohol and BUs than found in most beers. As Ken Grossman said, he makes beers he wants to drink.

**Production**

Early craft brewers realized the equipment needed for the small-scale producers did not exist, forcing brewers to become creative and turn to other industries for their equipment. Ken’s wife Katie is from a dairy family. Repurposed dairy equipment became one of the main sources of equipment for small-scale brewers. Some modification was needed; however, this was not out of reach for the creative brewers. As the company grew, Ken was faced with a decision to keep innovating or search the world for real brewing equipment. Ken chose the latter and traveled to Germany where he purchased the heart of his 3rd brewery the “New (Old) Brewery”, a solid copper 100-barrel brewhouse. This brewery is still in production today and is known as the “West brewery” at the Chico plant. This brewery was paired with a similar 200-barrel brew house, known as the “East Brewery”. The original coppersmiths who built the salvaged German brewery were called out of retirement to clad the new brewing vessels in copper for a matching second brewery.
Each expansion cut production costs and boosted efficiency. However, Sierra Nevada Brewing Company has currently outgrown four separate breweries and is building its 5th in North Carolina. Most brewers build only one brewery in their lifetime. Ken Grossman has built five. The Chico, CA, plant can currently produce roughly 1 million barrels annually. Ken’s 5th brewery is being built in Mills River, NC. Initially this plant will be able to produce 300,000 barrels, with room to grow and plans of expanding up to 800,000 barrels. Each new brewery was made to meet excess demand for product, and in each case demand grew faster than supply.

Sales

While brewing such a variety of beers gives Sierra Nevada a unique reputation, it is sales that drive what is brewed and how much of it is brewed. Sierra Nevada, though privately held by the Grossman family, still provides a fair amount of information regarding Sierra Nevada’s annual sales revenue and production. In 2012, 966,000 barrels of beer were produced at Sierra Nevada’s Chico brewery generating estimated annual sales revenue of $40.7 million. A barrel of beer is equivalent to 31.5 gallons, which equates Sierra Nevada’s annual production to 30,429,000 gallons of beer. Even at this seemingly large number, the demand for Sierra Nevada’s beer still outpaces supply. Of the roughly 30.5 million gallons of production in 2012, 70% of it was Sierra Nevada’s flagship product Pale Ale, 15% was Torpedo Extra IPA, and another 5% came from seasonal offerings. This means that eight beers offered by Sierra Nevada equate to 90% of production and sales revenue. The majority of Sierra Nevada Pale Ale is sold domestically in the United States but it is also offered in nine European countries. While experimental beers attract a niche market of beer drinkers, it is clear that Sierra Nevada’s classic beers are their biggest movers. In terms of packaging, 65% of the beer volume is in bottles, 25% kegs, and 10% cans. Sales by package and type of beer are shown in Exhibit 4. Sierra Nevada, like all brewers, faces the dilemma that canned beer has flavor protecting benefits but consumers still perceive beer in bottles as higher quality. Sierra Nevada’s best performing sales region is by far Northern California due to consumer loyalty and brand recognition. Following California is New York and potential growth is expected in Florida. While many specifics of Sierra Nevada’s sales information is not available to the public it is clear that they brew a high quantity of craft beer and do not have a problem selling it.

Distribution

Since the repeal of Prohibition, alcohol distribution in the US has been divided into a three-tier system of producers, distributors, and retailers. This system was put in place so the government could regulate alcohol consumption; before the prohibition there were no laws that regulated alcohol. Essentially, producers are only allowed to sell to distributors, distributors can only sell to retailers, and retailers are the only ones allowed to sell to consumers. This system also helps standardize and collect taxes on alcoholic beverages and the more times alcohol changes hands the more times it is taxed, meaning greater income for the government.

Sierra Nevada is considered to have been “grandfathered into” having two distribution channels for their beer. Ken started out distributing his beer with his partner around Chico in their personal vehicles. Beer was distributed at the beginning of each week, then bottles were collected at the end of the week.
in order to reuse and recycle them. Ken continued this process and as his brewery grew so did the need to distribute to a larger area. A state law was passed that prohibited breweries from distributing their own beer, but since Sierra Nevada have been using two vehicles before the law to distribute beer they were allowed to continue distributing with two vehicles after the law was enacted. Sierra Nevada currently distributes their own products around the area of Chico with two large freight trucks. Outside the Chico area Sierra Nevada relies on outside other companies to distribute their beer.

**Marketing**

Sierra Nevada does not focus on traditional marketing. When Ken Grossman was developing the company’s original business strategy, he did not even account for marketing. Sierra Nevada primarily uses the push marketing strategy, which relies heavily on the notion that people will buy the product if it is available. So far this strategy has been successful. Sierra Nevada does have merchandise such as sweaters, hats, posters, and stickers with their logo that they carry in their gift shop, but they do not not rely on traditional marketing tools such as mass media advertisements or billboards; instead the company relies on word-of-mouth. Grossman’s decision behind adopting the push strategy stems from his dedication to high quality beer; if the beer is good, then it will be able to sell itself. The unofficial company policy on advertising is “our advertising comes out of a 12-ounce bottle.” This being said, Sierra Nevada does participate in events and relies on endorsements to grow their demand.

**Endorsements and Events**

Sierra Nevada’s first key endorsement came from Alice Waters, the owner of the famed Berkeley restaurant Chez Panisse. Waters shares Sierra Nevada’s commitment to quality and decided to serve Pale Ale at her restaurant in the early ’80s. This endorsement exposed Sierra Nevada to a new market. Grossman recalls, “It gave us exposure to foodies and other restaurateurs. Alice was doing innovative things with food. So that was positive for building our brand.” Apart from endorsements, Sierra Nevada has a team of employees that work on coordinating on site and outside events. Being an avid biker, Grossman sees opportunity to market his beer at biking races and festivals. Sierra Nevada also participates in food festivals and beer fests with the intent to spread the word about their products.

**Beer Camp**

With craft beer only making a small portion of the total beer consumption in the United States, Grossman believes that promoting the entire craft industry will be beneficial for everyone involved in the industry. In an effort to promote the craft brewery industry, and likely as a fun activity for Ken, Sierra Nevada created a “Beer Camp” where craft brewers from across the US gather to share techniques and tips about brewing. The first Beer Camp was held in 2008 in the Chico brewery and has since become a regular event with more than one hundred participants. The event is described as a two-day, “hands-on beer experience.” To celebrate the opening of the North Carolina plant, Sierra Nevada scheduled a cross-country event tour for the twelve breweries who participated in the 2014 Beer Camp that ends in North Carolina plant. Apart from the tour, Sierra Nevada is planning to create a variety pack featuring beers from all twelve breweries with the hopes of increasing the interest for craft beer.
On-site Marketing

Sierra Nevada has made visiting their Chico plant an experience. Equipped with a tasting room, a restaurant, and a gift shop, visiting the Sierra Nevada plant in Chico has become a popular event for beer fans. Sierra Nevada offers scheduled tours every day and average about 750 people per week. The tours are highly popular and are often full. To everyone at Sierra Nevada, the tours are essential for the growth of the company because those who visit have a better understanding of the company and will hopefully be more inclined to support it.

Sierra Nevada has no plans to start traditional marketing such as media advertising, or as John the tour leader said, “We’ll never have a NASCAR.” The company promotes their products tours, endorsements, and events, particularly outdoor activities such as bike races. Additionally, Sierra Nevada has been able to increase the market for the entire craft brewery industry by holding Beer Camp and other events, which—to the company—is more valuable than a billboard.

Sustainability Practices

Sierra Nevada has a Sustainability Department which focuses on planet, product and people. Its three main goals are to promote zero waste action, increase workspace efficiencies, and lead by example to inspire change. To achieve these goals Sierra Nevada employs a wide variety of practices and programs to ensure that their sustainability program extends to every facet of their company.

Planet and Product

With the environment in mind, Sierra Nevada purchases ingredients from farmers that use sustainable farming practices and do not use genetically modified barley and hops. Sierra Nevada uses more whole cone hops than any other brewer in the world. This buying power allows Sierra Nevada to work closely with hop growers to improve and expand organic and sustainable farming practices. From 2009 to 2012 Sierra Nevada implemented a “Farm With Your Brewer” program, which gave barley farmers an incentive to use sustainable farming practices. This program required farmers to track irrigation and harvesting with GPS, minimize chemical applications, and adopt an environmental farm plan. In return, farmers received financial incentive per arce of barley enrolled in the program.

Sierra Nevada boasts substantial use of renewable energy used to power their Chico brewery. Specifically, they use both on-site solar panels and hydrogen fuel cells. Sierra Nevada has one of the largest amounts of privately owned solar panels in the country: 10,573 solar panels are located on the Chico brewery roof and atop the parking structures. In 2012 these solar panels produced 2,876,115 kWh of power, providing 19% of Sierra Nevada’s total electricity needs. In 2005, Sierra became the only brewing operation in the United States to install hydrogen fuel cells. Their onsite facility consists of four 250 kW Fuel Cell Energy units that produced 6,225,868 kWh of power in 2012, providing 42% of total electricity needs. The fuel cells also utilize heat recovery units that recover the hot exhaust leaving the units to produce steam used in the brewing process. In 2012, Sierra Nevada also installed new refrigeration equipment that is 50% more efficient than their old equipment. Finally, the brewery also
recovers methane-rich biogas used in its water treatment process. The captured gas is then used in on-site boilers that drive the brewing process.

Sierra Nevada approaches energy efficiency in a holistic and multi-faceted manner; their goal is to cut costs while preserving the environment. Energy efficiency projects include automation and process controls, indoor lighting upgrades, and a better awareness among employees about the resources they use. Water use reduction is also encouraged as a way to be energy efficient. Implementing water conservation practices and increasing awareness throughout their facility has allowed Sierra Nevada to decrease water consumption annually despite the fact that beer production has increased. Before waste water is discharged into the municipal water treatment system Sierra Nevada pretreats all of its effluent brewing process water. Water is first screened for any spent grain and then sent to equalization tank to ensure it is the proper temperature and pH. From there, the wastewater undergoes anaerobic digestion and is further treated in an aeration basin to settle out remaining solids. When water enters the municipal system it is similar in composition to residential effluent water. This water treatment system has greatly reduced the brewery’s sewer fees and produces biogas, which is used to power boilers. An overview of Sierra Nevada’s water usage is displayed in Exhibit 5.

Sierra Nevada also aims to reduce its environmental impact through its packaging, introducing several new types of packaging over the last two years. First, they implemented redesigned 12-pack boxes that eliminate 243 pounds of cardboard per truckload. The next packaging change was the launch of Pale Ale and Torpedo Extra IPA in cans. Both cans and bottles are highly recyclable, but cans have added benefits in that they do not break and are lighter than bottles, reducing overall transportation costs. Sierra Nevada’s final sustainable packaging practice comes in the form of stainless steel beer kegs. Kegs are infinitely reusable and refillable. Roughly 20% of Sierra Nevada’s production comes in the form of kegs.

One of Sierra Nevada’s most impressive sustainable aspects comes from their comprehensive waste diversion program. It currently diverts 99.8% of solid waste away from landfills and by reducing, reusing, and recycling many of their resources Sierra Nevada hopes to bring this number even closer to 100%. Resources are reduced at Sierra Nevada’s brewery in many ways. For example, Sierra Nevada no longer receives individually packaged items from their vendors, provides employees with reusable bags and coffee mugs, and has installed hand-dryers to reduce the amount of paper towels used on-site. Sierra Nevada reuses packaging materials, such as rebuilding broken pallets, and by donating used grain sacks to local landscape companies. The materials that Sierra Nevada recycles cardboard, shrink-wrap, glass, scrap metal, wood, paper, and plastic strapping. All spent grain and yeast is recovered and fed to local cattle. Finally, Sierra Nevada also composts some of its waste materials. In 2010 they installed a HotRot composting system; a large, in-vessel composter. Composted materials include spent hops, spent grain, paper towels from restrooms, and all food and paper materials from their onsite restaurant. In 2012, the HotRot composted 126 tons of food waste, 98 tons of hops, and 33 tons of spent grains. Sierra Nevada’s annual waste diversion can be seen in Exhibit 6.

Sierra Nevada’s final aspect of environmental sustainability comes in the form of transportation. There is no doubt that transporting Sierra Nevada’s beer to store shelves has substantial impact on the environment, but the Sierra Nevada has done their best to minimize their impact. Rail transport is one of
the most efficient ways to transport goods across the country. To capitalize on this, Sierra Nevada purchased property for a rail spur less than two miles away from their brewery. In 2012, 23,775 tons of malt was received at this facility and 70% of easterly bound beer was shipped by rail. Sierra Nevada also supports various forms of alternative transportation including the support of biodiesel and electric vehicles. In 2012, 2,650 gallons of used vegetable oil from Sierra Nevada’s restaurant was turned into biodiesel. Sierra Nevada provides free electric vehicle charging for all patrons, vendors, and employees and their sales force almost exclusively uses hybrid vehicles.39

People

Sierra Nevada is dedicated to making sure that their employees are treated well. Grossman developed Sierra Nevada on the love for good beer. Because he enjoys making beer, he wanted to create a company culture of pride and satisfaction from making good beer. Although Grossman is a very busy entrepreneur, he still tries to connect with his employees by having daily chats and biweekly lunches with a few employees.40 Sierra Nevada prides themselves on their employee-oriented culture, which offers an abundant amount of benefits for their workers.

Benefits

Sierra Nevada offers their employees a wide range of benefits including the ability to take advantage of all the onsite facilities. Each employee is given a meal plan that grows with the amount of years they are in the company that allows them to take advantage of the pub and restaurant. In addition to health and pet insurance, Sierra Nevada offers an on-site health clinic and subsidized childcare for all employees.41 To promote a healthy lifestyle Sierra Nevada also gives incentives to workers who ride their bikes to work or participate in the Health Opportunity Program (HOP). HOP offers services and initiatives in the areas of injury prevention, massage therapy, nutrition, weight loss, fitness, tobacco cessation, substance abuse, and stress reduction in order to give Sierra Nevada healthier, happier workers.42 Additionally, Sierra Nevada offers full time employees a 401K-retirement plan and profit shares after five years of employment. Employees are also given the opportunity to take a case of beer home with every paycheck or, if the person does not drink beer, they can choose to receive juice from a partner company instead. Mostly due to the employee’s passion for beer and Sierra Nevada’s commitment to employee satisfaction, about 55% of the workers have been with Sierra Nevada for five years or more and it is common for a person to stay in the company for over 20 years.43

Meeting Supply

It seems as though Sierra Nevada has never been able to keep their supply at a level that matches their demand. They have outgrown four breweries and are working on a fifth. New products are frequently released from the brewery; these products are not traditionally marketed, yet seem to fly off the shelves and out of taps. The brewing company has never had to reduced production due to slow sales; the future looks no different as Sierra Nevada expands to another plant on the opposite side of the country from their current brewery. When asked whether or not Sierra Nevada would ever meet their demand John Pearson stated “It’s a fantastic problem to have, one that we can defiantly live with.”44 It was made clear that Sierra Nevada will not ramp up production just because they can, or feel pressure to;
they will only increase production when the time is right and when they have the means to do it properly. Providing a customer with sub-par product is not a practice they ever have or ever will participate in.

“"I’m not a number guy, I’m a beer guy" is a statement that is not uncommonly said by founder Ken Grossman. At Sierra Nevada’s center is a passion for making quality beer. Their philosophy centers on the idea that if they make a consistently good beer people will drink it. This idea is the heart and center for Sierra Nevada Brewing Co. and it is contagious. Consumers like to have a connection to a product. When the Sierra Nevada story is told consumers immediately begin to feel a connection to the product. Combine this likability with a quality product and the recipe for success has just been formed. Many of the decisions made by the company may not make the most sense from a business or a money perspective. But often times the decisions are made because it’s simply “The right thing to do”. Again this adds to the attractiveness of the company which in-turn makes people genuinely like Sierra Nevada. People support what they like and what they have a connection to. When the average beer drinker goes to select his beverage, there is little competition between a mass produced brew and a handcrafted draft to which a connection has been formed.

**Mills River, North Carolina**

*Sierra Nevada’s New Brewery*

A tradition throughout the beer industry is that the owner of a brewery should build one new brewery in his/her lifetime. Each proceeding owner for that brewery would expand the company by building their own brewery and thus continuing to expand the business. This trend shows the expansion of each brewery from where they started to where they are going and the success of their brewery. That being said, Ken Grossman is about to finish his fifth brewery built in his lifetime.

Until recently, expanding Sierra Nevada brewery had only taken place at their current brewery in Chico. Adding onto the existing brewery has gotten the business up to this point. With no more room to increase capacity of the brewery in Chico to meet demand, Sierra Nevada and the Grossman family decided to build a new brewery half way across the United States. This new brewery is located in Mills River, North Carolina.

Finding the town of Mills River was not an easy one for the Grossman Family. It took them more than two years to discover this place because there were certain factors that needed to be met in order to support the type of brewery that has made Sierra Nevada what it is today. The outdoor recreation life and the quality of life of the people in the town were some of the characteristics that first drew Ken to fall in love with Chico and these same factors are what drove the Grossman family to choose Mills River. With the most important factors for a brewer—water quality and supply—being met in this area, other factors that help aid the family’s decision is the support they received from the community of Mills River. With the community support and the support of all the local breweries in the town, Mills River, North Carolina was the right choice. 46
The brand was built around the idea that if people see the product in the stores and are able to go on tours of the factory then they will buy the beer. Keeping that in mind, the new brewery being built is focused on the tourism that Sierra Nevada plans to have. It is being built in a linear fashion where one can see the whole brewing process just by walking from one end to the other end. The creative design of the new brewery was sparked because Sierra Nevada has felt that ever since the increase of tours of the Chico brewery, the sales of beer has sky rocketed. This goes back to the idea that if people are going to take the time to see the brewery then they are going to buy the beer.

Once finished the North Carolina brewery is going to be the most technically advanced brewery in the world. With sustainability being one of the major factors of Sierra Nevada’s culture and mission statement, it has spared no expense for creating an environmentally friendly, zero-carbon footprint brewery. Nearly two acres solar panels cover the brewery right now and as the parking lot is completed, more panels will be added.\[47\]

The total capacity of the new plant is starting out around 300,000 barrels of beer, and won’t start selling until beer testers can’t tell the difference of beer between the North Carolina plant and Chico plant. This plant also has the capacity to grow to 800,000 barrels of beer if they need to expand. Also where this brewery is located it is going to help with distribution to the East Coast as well as help Sierra Nevada with supply of beer.

**Problems Addressed**

In recent years, Sierra Nevada has faced a problem of demand. Not a shortage of demand but a surplus of demand. With max capacity already reached in the Chico brewery, help is going to come from the new brewery in North Carolina. Like stated above the new brewery is going to start out with 300,000 barrels of beer but with the ability to grow to 800,000 barrels. This will give the whole company roughly 1,800,000 million barrels of beer that they could produce between the two breweries. Whether or not that will be enough to meet demand is only going to be known by the company, but the underlying question for the company is do they really want to meet demand? By having an excess demand the company can rely on having a stable and constant customer base.

The culture of Sierra Nevada is one they take pride in. In Chico, every employee loves to come to work because they love what they do and they love beer. The culture of the Chico brewery has a lot to do with the community of the town of Chico in general. Keeping that in mind, the management of Sierra Nevada hopes that the culture of North Carolina brewery develops its own unique culture.

The craft beer industry is only about 6% of the beer market so with that being said, craft brewers have to work together by promoting craft beer together. Many smaller breweries are already located where the new brewery is being built but they have embraced the move of Sierra Nevada to the area. With how popular Sierra Nevada is on the west coast because of the Chico brewery, the move to the East coast is going to help the company expand its market possibly becoming even more prevalent around the United States.
Maintaining quality and consistency is what Sierra Nevada takes a lot of pride in. Having testers that test every batch of beer to make sure it meets the high standards that Sierra Nevada holds itself too. If one barrel of beer doesn’t meet the standards then it is tossed out and corrections are made so that it doesn’t matter what barrel the beer is from; it will all taste the same. Along with the tasters, Sierra Nevada has been brewing the same beer out of the same pipes for the last 33 years, which means that the pipes do have a significant role in the taste of the beer. The North Carolina brewery has already started producing test beers and will not start distributing beers out of the brewery until it meets the high standards.

**Sierra Nevada’s Future**

*Room to Grow*

Opening their new brewery in North Carolina will allow Sierra Nevada to somewhat catch up with demand, allow them to diversify their company culture, and help them promote the overall Craft Beer industry. When Ken Grossman makes a decision he does it correctly the first time. This has been proven through the success of his Chico brewery and will prove true again when his North Carolina brewery opens. When he drinks his first Pale Ale produced in North Carolina he will realize that this move to expand will solidify future growth and prosperity for Sierra Nevada Brewing Company. Pale Ale and other innovative products from Sierra Nevada also continue to fly off store shelves showing that the same passion for making quality beer remains strong at the Sierra Nevada Brewing Company. well as the As dedication, innovation, and integrity continue to prosper at Sierra Nevada there is no doubt that the future looks bright.
Exhibit 1  Growth of the Craft Beer Industry

**Total Beer Volume vs. Craft Beer Volume**

(Millions of barrels)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Beer Volume</th>
<th>Craft Beer Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>209.4</td>
<td>6.0</td>
</tr>
<tr>
<td>2006</td>
<td>214.0</td>
<td>7.1</td>
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<tr>
<td>2007</td>
<td>216.6</td>
<td>8.1</td>
</tr>
<tr>
<td>2008</td>
<td>217.8</td>
<td>8.5</td>
</tr>
<tr>
<td>2009</td>
<td>211.9</td>
<td>9.1</td>
</tr>
<tr>
<td>2010</td>
<td>210.0</td>
<td>10.0</td>
</tr>
</tbody>
</table>

U.S. Beer Market  Craft Beer Market

**2010 - 2011 Dollar Sales Growth**

(Growth in % dollar sales change in U.S. Food Channel)

- Cider: 23.6%
- Craft: 14.4%
- Progressive Adult Beverages: 7.0%
- Domestic Premium: 0.4%
- Import: (0.3%)
- Domestic Super-Premium: (0.6%)
- Non-Alcoholic: (0.7%)
- Domestic Sub-Premium: (2.5%)
- Domestic Malt Liquor: (4.2%)
Craft Beer – Top 30 Brands

While Craft Beer production is concentrated on the coasts, the Mid-West region should not be ignored as it is home to two of the nation’s largest Craft brewers.

**West**

<table>
<thead>
<tr>
<th>Company</th>
<th>Craft Rank</th>
<th>Type</th>
<th>3% Sales Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stone Brewing</td>
<td>2</td>
<td>Pale Ale</td>
<td></td>
</tr>
<tr>
<td>Deschutes</td>
<td>5</td>
<td>Pale Ale</td>
<td></td>
</tr>
<tr>
<td>Bell’s</td>
<td>11</td>
<td>IPA</td>
<td></td>
</tr>
<tr>
<td>New Belgium</td>
<td>14</td>
<td>ESB</td>
<td></td>
</tr>
<tr>
<td>Lagunitas</td>
<td>17</td>
<td>IPA</td>
<td></td>
</tr>
<tr>
<td>Full Sail</td>
<td>18</td>
<td>Amber</td>
<td></td>
</tr>
<tr>
<td>Anchor</td>
<td>23</td>
<td>Stout</td>
<td></td>
</tr>
<tr>
<td>Kerz</td>
<td>24</td>
<td>Lager</td>
<td></td>
</tr>
<tr>
<td>Rogue</td>
<td>25</td>
<td>Pale Ale</td>
<td></td>
</tr>
<tr>
<td>Firestone Walker</td>
<td>26</td>
<td>Pale Ale</td>
<td></td>
</tr>
<tr>
<td>Gordon Biersch</td>
<td>30</td>
<td>Lager</td>
<td></td>
</tr>
<tr>
<td><strong>Average Rank</strong></td>
<td><strong>17.8</strong></td>
<td></td>
<td></td>
</tr>
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</table>

**East**

<table>
<thead>
<tr>
<th>Company</th>
<th>Craft Rank</th>
<th>Type</th>
<th>3% Sales Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston Beer</td>
<td>1</td>
<td>Lager</td>
<td></td>
</tr>
<tr>
<td>Independent Brewers United</td>
<td>6</td>
<td>Pale Ale</td>
<td></td>
</tr>
<tr>
<td>Hitting Brewing</td>
<td>7</td>
<td>Pale Ale</td>
<td></td>
</tr>
<tr>
<td>Two Harbors</td>
<td>9</td>
<td>IPA</td>
<td></td>
</tr>
<tr>
<td>Dogfish Head</td>
<td>11</td>
<td>IPA</td>
<td></td>
</tr>
<tr>
<td>Long Trail</td>
<td>13</td>
<td>IPA</td>
<td></td>
</tr>
<tr>
<td>Brooklyn Brewery</td>
<td>15</td>
<td>Brown Ale</td>
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</tr>
<tr>
<td>Smuttynose</td>
<td>19</td>
<td>Pale Ale</td>
<td></td>
</tr>
<tr>
<td>Sweetwater</td>
<td>27</td>
<td>IPA</td>
<td></td>
</tr>
<tr>
<td>Flying Dog</td>
<td>28</td>
<td>Pale Ale</td>
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</tr>
<tr>
<td>Victory</td>
<td>29</td>
<td>IPA</td>
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</tr>
<tr>
<td><strong>Average Rank</strong></td>
<td><strong>16.7</strong></td>
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</table>

**Mid-West**

<table>
<thead>
<tr>
<th>Company</th>
<th>Craft Rank</th>
<th>Type</th>
<th>3% Sales Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralia</td>
<td>3</td>
<td>Amber Ale</td>
<td></td>
</tr>
<tr>
<td><strong>Average Rank</strong></td>
<td><strong>3.6</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Great Lakes / Southeast**

<table>
<thead>
<tr>
<th>Company</th>
<th>Craft Rank</th>
<th>Type</th>
<th>3% Sales Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellaire</td>
<td>8</td>
<td>Wheat</td>
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</tr>
<tr>
<td>Buckhorn</td>
<td>16</td>
<td>Wheat</td>
<td></td>
</tr>
<tr>
<td>Northside</td>
<td>17</td>
<td>Amber Ale</td>
<td></td>
</tr>
<tr>
<td>Sawmill</td>
<td>22</td>
<td>Pale Ale</td>
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</tr>
<tr>
<td>New Glarus</td>
<td>21</td>
<td>Pale Ale</td>
<td></td>
</tr>
<tr>
<td>Great Lakes</td>
<td>22</td>
<td>Pale Ale</td>
<td></td>
</tr>
<tr>
<td><strong>Average Rank</strong></td>
<td><strong>14.6</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Type represents variety Craft brewery is best known for.
Note: Garb ktoś includes Shiner, Pete’s Wicked, Trumer Pils, Tepezcolte Valiente, and Bridgeport brands. Independent Brewers United includes Magic Hat and Pyramid brands.
Source: Brewers Association, U.S. Total Food Data for week ending March 27, 2011, and other Wall Street research.

U.S. Beer Industry Segmentation
(Barrels in millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Premium</th>
<th>Sub Premium</th>
<th>Imports</th>
<th>Craft</th>
<th>Super Premium</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>109</td>
<td>108</td>
<td>29</td>
<td>46</td>
<td>214</td>
<td>29</td>
</tr>
<tr>
<td>2008</td>
<td>108</td>
<td>104</td>
<td>26</td>
<td>48</td>
<td>214</td>
<td>29</td>
</tr>
<tr>
<td>2009</td>
<td>104</td>
<td>101</td>
<td>27</td>
<td>46</td>
<td>210</td>
<td>27</td>
</tr>
<tr>
<td>2010</td>
<td>101</td>
<td>99</td>
<td>27</td>
<td>44</td>
<td>209</td>
<td>27</td>
</tr>
<tr>
<td>2011</td>
<td>99</td>
<td>209</td>
<td>27</td>
<td>44</td>
<td>206</td>
<td>27</td>
</tr>
</tbody>
</table>

Legend:
- Premium
- Sub Premium
- Imports
- Craft
- Super Premium
- Other
Components of Craft Beer Growth

- Import Beer: 17%
- Prem. Beer: 14%
- Super Prem. Beer: 6%
- Below Prem. Beer: 5%
- FMB's: 3%
- Current Drinkers Drinking More: 30%
- Wine: 8%
- Spirits: 6%
- New Craft Drinkers: 11%

U.S. Beer Industry Growth by Segment

Exhibit 2  Image of the Torpedo

SIERRA NEVADA BREWING CO.

YEAR ROUND PRODUCTS

**Pale Ale**
In 1980, we created a beer highlighting the bold flavors and piney-citrus aromas of whole-cone Cascade hops. The quality, craftsmanship, and flavors were so unique that they helped change the face of American brewing. Today, our all-natural, bottle-conditioned Pale Ale is recognized worldwide as a classic.

Alcohol Content: 5.6% By Volume
Yeast: Ale Yeast
Malts: Two-Row Pale & Caramel
Bittering Hops: Perle
Finishing Hops: Cascade
Bitterness Units: 37

**Torpedo® Extra IPA**
Torpedo® Ale is a big American IPA full of hop flavor and aromas. Utilizing the “Hop Torpedo,” our unique method of dry hopping, we harness precious oils and resins to showcase the complex citrus, pine and herbal flavor and aromas that hops have to offer.

Alcohol Content: 7.2% By Volume
Yeast: Ale Yeast
Bittering Hops: Magnum
Malts: Two-Row Pale & Crystal
Finishing Hops: Magnum & Crystal
Torpedo Hops: Magnum, Crystal & Citra
Bitterness Units: 65
Porter
Porter features loads of roasted malts, which give it a rich, bittersweet and roasted toffee-like flavor. This medium-bodied ale is perfectly balanced with a smooth malty flavor and crisp American hops.

Alcohol Content: 5.6% By Volume
Yeast: Ale Yeast
Malts: Two-Row Pale, Munich, Chocolate, Caramel, Carafa and Black Bittering Hops: Perle, Warrior, Millennium, Magnum
Finishing Hops: Willamette, Yakima Golding
Bitterness Units: 32

Stout
Our Stout is brewed with generous amounts of deep roasted malts, providing a bold, roasted coffee and dark chocolate flavor with a hint of sweetness. This full-bodied American version of the traditional black ale is perfectly balanced with big malt flavors and earthy whole-cone hops.

Alcohol Content: 5.8% By Volume
Yeast: Ale Yeast
Malts: Two-Row Pale, Munich, Carafa, Caramel & Black Bittering Hops: Brewer’s Gold
Finishing Hops: Cascade, Cluster and Northern Brewer
Bitterness Units: 50

Kellerweiss®
Kellerweiss is one of the only American Hefeweizens made using the traditional Bavarian style of open fermentation. This difficult and labor-intensive technique adds uncommon depth and flavor complexity. Our hazy-golden Hefeweizen is deeply flavorful, refreshing, and perfect for a sunny day.

Alcohol Content: 4.8% By Volume
Yeast: Ale Yeast
Malts: Two-Row Pale, Wheat & Munich
Bittering Hops: Perle
Bitterness Units: 15
Exhibit 4  Sierra Nevada Sales

**ANNUAL SALES BY BEER**

- Pale Ale 70%
- Torpedo Extra IPA 15%
- Seasonal Beers 5%
- Other 10%


**ANNUAL SALES BY PACKAGE**

- Cans, 65%
- Bottles, 25%
- Kegs, 10%
Exhibit 5  Sierra Nevada’s Water Usage

Exhibit 6  Sierra Nevada’s Annual Waste Diversion

Endnotes


