San Diego Craft Beer Industry Cluster

A Revolutionary Moment in the US Beer Industry

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1. Executive Summary

The San Diego Craft Beer Cluster has seen enormous growth over the past several years. There are over 100 licensed breweries in San Diego, which generated $851 million in sales in 2015, a 17% increase over 2014.¹ The growth of the craft beer industry is not only from local residents but also from outsiders that come to visit San Diego. The city is likened to be the “Napa Valley of Craft Beer.”²

Fueling the cluster’s success is California’s overall economic improvement over the last decade. In 2013, State revenue outpaced spending for the first time in several years. The business environment at the State level and in San Diego exhibits strong factor conditions around R&D expenditures, venture capital, and scientific degrees awarded. The States excels on measures of prosperity, wages, and employment. In addition, economic development policy in California, incentivizes new business creation in manufacturing and R&D.

The cluster faces increasing competition from other regions in the U.S., such as Williamsburg (Brooklyn), NY and Denver, CO and also large beer manufactures, such as AB InBev and Miller Coors, but is positioning itself for success. One of California’s strength is found in its network of institutions for collaboration, and the craft beer industry has followed suit. The San Diego Craft Brewers Guild and Craft Beer Association of San Diego are organizations recently founded to organize the efforts and influence of brewers in the area. Local government has also stepped up to assist this growing cluster by identifying Food & Beverage manufacturing as key economic sector in the regional plan, which will align resources to support the cluster.

However, in order to grow and sustain the cluster greater collaboration and continued innovation will be required:

**Recommendations for Firm Strategy and Rivalry**

- Establish a brand or marker to distinguish local craft brews from craft brands owned by multinational corporations.
- Encourage innovation and development of new breweries.

**Recommendations for Demand Conditions**

- Equip brewers with information around the specific segments to which craft brews appeal.
- Establish a branding and marketing campaign for the San Diego Beer Cluster both domestically and internationally.

**Recommendations for Supporting Industries**

- Achieve a competitive advantage or point of differentiation by facilitating superior or local sourcing of other inputs besides yeast (barley, hops, water, flavorings, etc.) or manufacturing materials (cardboard boxes, glass bottles, machinery, etc.).
- Explore areas within hospitality that can benefit from the San Diego Beer Cluster and work to facilitate synergies between those industries.

**Recommendations for Factor Conditions.**

- Facilitate events centered around the sharing of best practices and thought leadership as it pertains to the operations of the cluster.
2. U.S. Economy Overview

Compared to other countries, the US has shown strong competitiveness. For example, World Economic Forum (WEF) ranks US 3rd in its most recent Global Competitiveness Report 2015-2016. (Figure 1)³

**Figure 1 - Global Competitiveness Index (US)**

This index consists of three sub-indices; Basic requirements, Efficiency enhancers, Innovation and sophistication factors. (Figure 2)⁴

In the report, the United States shows its major strength as its unique combination of exceptional innovation capacity (4th), large market size (2nd), and sophisticated businesses (4th). This innovation capacity is driven by collaboration between firms and universities (2nd), human capital (4th on availability of scientists and engineers), and company spending on R&D (3rd). Based on the U.S. Cluster Map, “Information Technologies and Analytical Instruments”, “Communications Equipment and Services”, and “Aerospace and Vehicles” industries have led

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⁴ Ibid
the innovation (evaluated based on the number of U.S. Utility Patents Awarded) in the United States\textsuperscript{5}.

**Figure 2 - Global Competitiveness Index Framework**

![Global Competitiveness Index Framework](image)

It is also pointed out that the flexible labor markets (4th) and an overall well-developed financial sector (5th) strengthen the US competitiveness.

However, the US shows relative weakness in its macroeconomic environment (96th) based on the high fiscal deficit and public debt derived from high health and social security costs and low national savings. In addition, the institutional environment (28th) driven by ethics and security perspectives would need further improvement for its sustainable growth.

In terms of the living standards, while the US has kept a strong position, the country has presented some concerns. After the Great Recession, the US economy has recovered and positioned itself as the biggest economy (GDP) in the world (Figure 3)\textsuperscript{6} and also one of the most prosperous countries as a living standard (GDP per capita) in the world.

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As Figure 4\textsuperscript{7} shows, the US ranks the 7th most prosperous country (GDP per capita (PPP-based)) in developed economy in 2014.

**Figure 3** - Nominal GDP (USD) by country (2014)

The US is, however, relatively unequal society. The World Factbook, reported by CIA\textsuperscript{8}, ranks the US as the 43rd unequal country out of 144 countries. In addition, while the average

\textsuperscript{7} Ibid

Prosperity has increased, the median figure has been continuously declining (Figure 5)\(^9\), meaning the income distribution is highly skewed to the top of the pyramid and thus increasing the inequality among society.

**Figure 5 - Real Median Household Income in the United States**

![Real Median Household Income in the United States](source)

Looking into more micro level, while US economic base is highly diversified, we could also find out that the US economy has been led by several big clusters. Just 4 industries, Business Service (25.8% of employment), Distribution and Electronic Commerce (13.0%), Hospitality and Tourism (7.2%), and Education and Knowledge Creation (7.0%), consists of more than half of the employment in 2013. The size of any other industry has less than 5% of the share of the total employment and the share of each industry has changed less than 1% during 1998-2013, meaning the these industries have stagnated.

Food Processing and Manufacturing industry, where the craft beer industry is categorized, consisted 2.21% of the employment share in 2013 and the employment share had

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declined just 0.0916% during 1998-2013, showing itself as a typical stagnant industry in the US. (Figure 6)¹⁰

**Figure 6 - Employment Change in US by Traded Cluster**

3. California Overview: The State’s Competitive Position

California is the third largest state by land area at nearly 164,000 square miles.¹¹ Encompassed in its borders are a variety of natural endowments from the Colorado River in the desert region, to oil and natural gas along the coasts of Santa Barbara and Long Beach, to mountains, forests, and redwood trees in the north and acres of rich soil and farmland in the central valley. The gold rush of the mid 18th century is one early example of how the State has leveraged its natural resources to support industry; another competitive edge is the warm climate and diversity of landscapes that attracted early filmmakers to the region, which ultimately led to a booming entertainment and film industry. California’s location on the coast has also allowed it to grow as a huge trading hub. Mexico, Canada, China, Japan, and Hong Kong are California’s

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largest trading partners, accounting for over $79 billion in exports in 2014.\textsuperscript{12} Computers and electronic products are the state’s leading export ($43 billion in 2014).\textsuperscript{13} Accordingly, California has a disproportionate share of advanced industry and technology jobs, which leads to highly skilled work force but also a bifurcated economy that is overly dependent on the technology sector and wide-ranging income inequality\textsuperscript{14}.

3.1 Population and Labor

California features large population centers that are ethnically and culturally diverse, and relatively well educated; which help to support a large GDP and higher per capita income when compared to other regions of the U.S. With almost 40 million residents, California is the largest state by population\textsuperscript{15}. San Diego, with 1.4 million residents, is second only to Los Angeles in population among California cities, \textsuperscript{16} and eighth largest among all U.S. cities. Between 2010 and 2014, the State and the City saw population growth of 4.2\% and 6.1\% respectively\textsuperscript{17}. California is one of the most diverse states in the Country. Its population is 38\% Hispanic or Latino, 37\% White, 14.4\% Asian, 6.5\% African American, 1.7\% American Indian, and 0.5\% Pacific Islander; Most of the population and diversity is concentrated in cities like Los Angeles, San Diego and San Francisco. About 31\% of the population aged 25 years old or older in California has earned a

\begin{footnotesize}
\begin{enumerate}
\item Ibid.
\end{enumerate}
\end{footnotesize}
Bachelor’s degree or higher. That number is even higher for San Diego at 42%.\(^{18}\) According to 2015 estimates, California ranks 10\(^{th}\) in per capita income with $52,651 while the US is $47,669.

3.2 State Clusters

California has a large and educated work force, which contributes to its overall competitiveness, and more specifically, contributes to its economic strength and diversification (Figure 7)\(^ {19}\). California’s 2014 GDP was 2.31 trillion; it grew 2.8% from 2013, and was led by the Business Services cluster, which includes fields like Computer Systems Design, Management Consulting, and Semiconductors, and employs over 1.3 million workers. Distribution & E-commerce, and Hospitality & Tourism are the 2\(^{nd}\) and 3\(^{rd}\) largest clusters with a combined workforce of 1.2 million people. At the state level, Video Production and Distribution and Apparel are the fastest growing clusters; and in San Diego, Aerospace Vehicles and Defense, Water Transportation, and Biopharmaceuticals are the fastest growing clusters (Figure 8)\(^ {20}\).

**Figure 7 - California Cluster Linkages & Economic Diversification**

\(^{18}\) Ibid
3.3 Social and Political Institutions

California is often regarded as one of the most Democratic and most liberal states in the country. Recent legislation suggests that the State may be leaning even more left than in recent years: The 2015 State budget allocated funding for Medicaid to cover undocumented immigrant children. Up to 40 professions and trades have been authorized to license undocumented immigrants\(^\text{21}\). Lastly, the Fair Wage Act of 2016 raised the minimum wage to $15 per hour. As evidenced by the legislative changes, the political climate in California is certainly shaped and influenced by its diverse population. Unions and other organized labor organizations hold significant power and influence in the State as well.

From 2008 to 2013, State spending on education per student decreased almost 15%, from $10,698 to $9,099, ranking California 48th out of 50 states\textsuperscript{22}. However, that metric has since improved as State revenues have risen. The Governor’s 2015 budget shows a renewed focus on education spending with $65.7 billion for K-12 education, $10 million for teacher training, and $500 million for adult education\textsuperscript{23}.

Increased in spending on education and other social institutions is the result of California steadily improving its financial position. After three consecutive years at A-, Standard & Poor’s upgraded the State to A in 2013, when revenue began to outpace spending\textsuperscript{24}. However, relative to the other 50 states, California still has the 2\textsuperscript{nd} lowest credit rating and it still burdened by huge pension liabilities. According to Truth in Accounting’s September 2015 report, California ranked 44\textsuperscript{th} out of 50 states in taxpayer burden with $150 billion in unfunded liabilities\textsuperscript{25}.

3.4 The California Diamond

When analyzing California’s business environment, clear strengths stand out in factor input conditions such as R&D expenditure per capita, $2,427; venture capital per $10,000 of GDP, and Science & Engineering doctorates awarded. These conditions support the innovation and growth across the leading clusters referenced above. Consumer spending is also relatively high, creating strong demand conditions. However, the state underperforms on the context for firm strategy and rivalry due to its high rate of unionized workers, 14.35%; state and local taxes

as percent of GDP, 10.49%; and corporate taxes as percent of GDP, 0.45%\textsuperscript{26}. The San Diego business environment exhibits very similar characteristics with strong indicators for input conditions such as venture capital per $10,000 of GDP and Scientific Degrees awarded; and weak indicators for firm strategy and rivalry due to the relatively higher percentage of unionized labor and corporate taxes as a percent of GDP.\textsuperscript{27}

3.5 Economic Development Policy in California

The Governor’s Office of Business and Economic Development (GO-Biz) leads the effort to attract, retain, and grow business in California. GO-Biz is the state’s one-stop shop for advising businesses on site selection, permit streamlining, regulatory challenges and more\textsuperscript{28}. GO-Biz as well as business friendly policies (Figure 9)\textsuperscript{29} have helped California create 1.6 million new jobs since 2010, which best in the country. One of the newest policies is California Competes, which is projected to provide $200 million in business expansion tax credits to companies that add jobs in 2015-2016\textsuperscript{30}.

California has also been proactive in leveraging the factor conditions present in the state; particularly around R&D. Sixteen regional innovation hubs have been established throughout the state (Figure 10). Other key drivers of economic development in California are its institutions for collaboration (IFCs). Over 70 organizations and agencies exist that include regional chambers of commerce and business alliances. These groups, such as the California Association for Local

Economic Development, facilitate information sharing between companies as well growth of industries outside of the state.

**Figure 9 - Select Economic Development Initiatives**

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>California Competes</td>
<td>An income tax credit available to businesses that want to come to California or stay and grow in California. The program is Statewide, with no geographic restrictions. Tax credit agreements will be negotiated by GO-Biz and approved by the California Competes Tax Credit Committee.</td>
</tr>
<tr>
<td>Partial Sales and Use Tax Exemption</td>
<td>A partial exemption of sales and use tax on certain manufacturing biotechnology and research and development equipment purchases. The partial exemption applies only to the state sales and use tax rate portion, currently at 4.1875 percent. The exemption does not apply to any local, city, county, or district tax.</td>
</tr>
<tr>
<td>Full Sales and Use Tax Exclusion - Advanced Manufacturing &amp; Transportation and Alternative Energy</td>
<td>A sales tax exclusion from both state and local sales tax collection on equipment purchases for qualifying businesses that conduct qualifying activities. Sales tax rates vary by jurisdiction (typically 7% to 9.25%).</td>
</tr>
<tr>
<td>New Employment Hiring Tax Credit</td>
<td>The New Employment Credit (NEC) is available for each taxable year beginning on or after January 1, 2014, and before January 1, 2021, to a qualified taxpayer that hires a qualified full-time employee on or after January 1, 2014, and pays or incurs qualified wages attributable to work performed by the qualified full-time employee in a designated census tract or economic development area, and that receives a tentative credit reservation for that qualified full-time employee.</td>
</tr>
<tr>
<td>California Research &amp; Development Tax Credit</td>
<td>Corporate income tax credits available to companies that have incurred qualified research expenses in California. A taxpayer qualifies for the credit if it paid or incurred qualified research expenses while conducting qualified research in California. The taxpayer may receive up to 15 percent of the excess of current year research expenditures over a computed base amount.</td>
</tr>
<tr>
<td>Employment Training Panel</td>
<td>A cash reimbursement for training cost incurred by employers set by a predetermined two-year performance based contract. Contracts vary based on number of employees enrolled, hours of training, training material and employee wages.</td>
</tr>
<tr>
<td>Industrial Development Bond</td>
<td>Industrial Development Bond (IDB) financing is a competitive financing option available for the acquisition of manufacturing facilities and equipment providing a financing option for manufacturers to access private capital markets at tax-exempt rates.</td>
</tr>
<tr>
<td>Small Business Loan Guarantee</td>
<td>The California Small Business Loan Guarantee Program (SBLGP) assists businesses with the creation and retention of jobs while encouraging investment into low- to moderate-income communities. The SBLGP enables small businesses to not only obtain a loan it could not otherwise obtain but more importantly helps to establish a favorable credit history with a lender so the business may obtain loans in the future on its own without the assistance of the program.</td>
</tr>
<tr>
<td><strong>California Capital Access with Collateral Support</strong></td>
<td>CalCAP CS pledges cash to cover the collateral shortfall of loans of $100,000 or more. CalCAP CS provides up to 40% of the loan value, with the possibility of an additional 10% for businesses located in a Severely Affected Community. Small business lenders loaning to businesses classified as a small business under U.S. Small Business Administration guidelines and that have fewer than 500 FTEs. The borrower's primary business and at least 51% of its employees or business income, sales or payroll must be in California. The business activity resulting from the bank's loan must be created and retained in California.</td>
</tr>
<tr>
<td><strong>Pollution Control Tax-Exempt Bond Financing Program</strong></td>
<td>Private activity tax-exempt bond financing to California businesses for the acquisition, construction, or installation of qualified pollution control, waste disposal, waste recovery facilities, and the acquisition and installation of new equipment.</td>
</tr>
<tr>
<td><strong>California Capital Access Program</strong></td>
<td>The California Capital Access Program (CalCAP) encourages participating banks and lending institutions to provide loans to small businesses that fall outside of conventional underwriting standards. Small business owners that have difficulty in obtaining conventional financing may qualify for a CalCAP loan through any CalCAP lender.</td>
</tr>
<tr>
<td><strong>California Film &amp; Television Tax Credit Program</strong></td>
<td>The California Film Commission offers a tax credit incentive program to qualified motion pictures. $100 million has been allocated annually beginning in fiscal year 2009-2010 through 2016-2017. The Program allows a 20% tax credit for qualified production related expenses to a taxpayer against State income taxes.</td>
</tr>
</tbody>
</table>

**Figure 10 - Regional locations of the Innovation Hub Program**
4. **The Global Beer Industry**

Beer and the beer industry have long been important parts of the global economic landscape. With roots in ancient Mesopotamia, brewing has grown from a poorly understood curiosity to a globally ubiquitous and highly sophisticated industry. Beer is the most consumed alcoholic beverage in the world and represents one of the most highly consumed beverages in total (some sources list it as third behind water and tea)\(^{31}\).

4.1 **Industry Overview**

The beer industry is defined as manufactures of alcoholic beverages, specifically ales, lagers, and malt beverages, primarily composed of barley and wheat. It excludes other alcoholic beverages such as distilled beverages, wines, and cider. Fundamentally, brewing is a simple biological process in which sugars, obtained from starchy grains, are converted to alcohol through yeast metabolism. Production requires, at a minimum, four primary ingredients: malted grains (primarily barley and wheat), hops, water, and yeast. Additional production inputs include cans, bottles, labels, and packaging material.

In 2014, The global beer industry produced 1.7 billion barrels of beer (bbls)\(^{32}\). Capacity was most heavily concentrated in China (25%) and the United States (10%) with Brazil (7%), Germany (5%), and Mexico (4%) comprising the top five producing nations.\(^{33}\) Additionally, the global beer industry produced $135.5 billion in revenue for the same reporting period and has remained relatively flat since 2011. It is expected that revenues will decline modestly in 2015.

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\(^{32}\) 1 barrel of beer is equal to 31 gallons and is abbreviated “bbl”

and show slow growth through 2020. This revenue trend has led to vast global consolidations in the form of mergers and acquisitions.\textsuperscript{34}

4.2 Industry Participants

The global beer industry can be divided into primarily two categories of firms: global macro-brewers and smaller craft brewers\textsuperscript{35}. Macro-brewers represent a greater than 90% of global beer production and are the main narrative within the beer industry, although craft beer is rapidly taking share it is still relatively small (13-15% in the United States which leads the globe). They are extremely consolidated, global in reach, and highly sophisticated. They represent the primary narrative of the beer industry. Figure 11 shows the ten largest global brewing companies.

Figure 11 - Global market-share of the leading beer companies in 2014, based on volume sales\textsuperscript{36}

\textsuperscript{34}IBISWorld. “IBISWorld Industry Report: Global Beer Manufacturing”. December 2015
\textsuperscript{35}Craft breweries are defined by the Brewers Association as breweries which produce 6,000,000 bbls or less annually, have an ownership structure where 75% of the equity is owned by a craft brewer, and produce 50% or more of its volume with “traditional or innovative brewing ingredients”.
\textsuperscript{36}Statista. “Beer Industry – Statista Dossier”. 2014
The second primary category of brewers are craft brewers. Craft brewers represent a minority of global beer production but are an extremely fast growing segment with regards to volume share and dollar share. This style of brewing which focuses on producing high quality, innovative products which serve the local community is largely a return to the historic “local pub” configuration. Rather than consolidated large breweries serving vast segments of the customer base, craft breweries seek to provide unique products to a premium customer segment at the local level and then seek to expand. At present, the United States has the most robust craft beer industry, see Figure 12.

**Figure 12** – Craft breweries per country

4.3 US Beer Industry

The United States has a long and rich history in beer and brewing. In 1620, Capt. Christopher Jones of *The Mayflower* diverted his ship from Virginia to land Massachusetts because the crew was low on beer and the water onboard was unsafe to drink. Many of the Founding Fathers were brewers, more accurately their wives and servants were brewers, and fought to keep this tradition independent in the United States.

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At present, the US beer industry reflects the global beer industry; heavy consolidation within macro-brewers and an emergent craft brewing sector. The US produced 197 million bbls of beer in 2014, a decline of 0.2%, which generated $149 billion in revenue. Craft beer represented 12% of the total production volume, growing at 13%, and 21% of industry revenues, growing at 15%. The remainder of production occurred in macro-brewers.\textsuperscript{38}

Considering the development of the US beer industry, it is possible to divide history after 1870, when detailed data is available, into four periods: emergent industrial brewing, prohibition, the rise of fizzy yellow beer, and the craft beer revolution. shows these four periods along with the number of US breweries each year. As can be observed, there are drastic changes in the number of breweries which correspond to each segment of history. These periods will be explicitly discussed with respect to San Diego.

**Figure 13** – Breweries in the United States per year and Descriptive periods\textsuperscript{39}

5. **San Diego Beer Cluster**

San Diego is one of the highest density regions for craft beer in the world and shows no signs of slowing down. With over a hundred breweries, fifty more in the plans, and a global

\textsuperscript{38} Data obtained from *The Brewers Association* 2015 survey. www.brewersassociation.org

\textsuperscript{39} Data obtained from *The Brewers Association* 2015 survey. www.brewersassociation.org
reputation for high quality beers, San Diego is a premier beer region. But how did this rich environment develop.

5.1 History of San Diego Beer

The brewing industry arrived in San Diego very early in its history. In 1868, two Austrian immigrants established rival breweries in the city and seeded the industry. Small breweries continued to appear and, in 1896, the San Diego Brewing Company was established. This brewery, which was the largest industrial enterprise in the city, catalyzed the opening of 6 additional breweries, including Mission Brewing and Aztec Brewing, prior to prohibition. Throughout this period San Diego, and the US at large, saw consolidation in the brewing space as economies of scale drove increased profits.40

Prohibition, established by the passage of the Volstead Act in 1919, decimated the brewing industry in the United States. Prior to prohibition there were more than 1500 breweries in the US and 33 were reinstated after this failed social experiment was repealed in 1933. Three San Diego breweries survived prohibition by producing “near beer”, hopped sodas, and medical tonics. While the US brewing industry was decimated by Prohibition, Mexican based breweries thrived as San Diegans went south of the border to satisfy their thirsts. This affinity for Mexican lagers and imported beers persisted into the 1980’s and ultimately catalyzed the rise of craft beer.41

From 1940 through the mid-1970’s, the theme of the beer industry was consolidation. By 1953, all breweries in San Diego had closed. Again, imported beer supported San Diegans’ desire for high quality beer and imported beer held a 10% market share in San Diego versus 4%

41 Ibid.
in the US at large.\textsuperscript{42} While San Diego had easier access to higher quality imported beers, the primary narrative of this time period was mass consolidation and the rise of fizzy yellow beer. The number of breweries peaked at 739 in 1936 and fell to 89 in 1978 while capacity continued to expand.\textsuperscript{43} This trend of consolidation would change rapidly with the introduction of legislation legalizing home brewing and the brew pub.

The craft beer revolution began in 1978 when President Jimmy Carter signed into law \textit{H.R. 1337} which officially made it legal for individuals to brew their own beer. Paired with the California legislature’s passage of \textit{Cal. Code § 23357}, which legalized the brew pub, the main barriers to opening craft breweries were removed. Yet, no breweries opened in San Diego until 1986. It took a dramatic rise in the costs of imported beers, up to 58\% for some brands, to truly catalyze the industry by making it economically viable for home brewers to make the jump from hobbyists to professionals.

An extremely strong home brewing culture and well established hobbyist groups, specifically the Quality Ale and Fermentation Fraternity (QUAFF)\textsuperscript{44}, allowed many breweries to be established quickly. Bolt Brewing was opened in 1986 and was the first brewery in San Diego since 1953. It was quickly followed by Karl Strauss Brewing Company (1989), Callahan’s Pub (1990), Pizza Port Brewing Company (1992), Ballast Point Brewing Company (1996), Coronado Brewing Company (1996), Stone Brewing (1996), and Gordon Biersch (1998). These foundational breweries have thoroughly established San Diego as a premier craft beer

\textsuperscript{43} Data obtained from \textit{The Brewers Association} 2015 survey. www.brewersassociation.org
region which is known around the world. Figure 14 shows the rapid rise in the number of new licenses in San Diego.

**Figure 14 – New Brewing Licenses in San Diego**

Over the last few years, commercial interest in craft brewing has skyrocketed throughout San Diego. In fact, more than half of all new brewery licenses in San Diego County have been issued in the last two years. The number of breweries and brewpubs has more than doubled. At the end of 2014, there were 97 breweries and brewpubs in San Diego County, a 165% increase from 2011’s tally. Growth is driven both by new enterprises as well as additional expansions of established breweries and brewpubs.

**5.2 San Diego Beer Cluster Map**

The San Diego Beer cluster map can be organized into suppliers of inputs and production equipment, distributors, educational institutions, consumer education, and institutes for collaboration (IFCs). (Figure 15)

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5.2.1 Inputs and production equipment

While most of the key ingredients (Hop, Barley (Malt)) and equipment (brewing equipment / packing equipment) are not sourced locally (refer to above link), San Diego has differentiated itself with its yeast production.\textsuperscript{46,47} The White Lab, established in 1995, is one of the largest yeast sellers in the country and has contributed a lot to push San Diego up as an active craft brewing industry.

5.2.2 Distribution

Unlike the bourbon, around a half of the production is consumed locally and 80% of the production is consumed in the United States. (Figure 16)\textsuperscript{48} This shows brewers’ strong ties to the local community and that the brewers also have relied on the local wholesalers to distribute their products under the US unique three-tier distribution system.

**Figure 16** - The sales location of the San Diego County Beer

5.2.3 Research institution

For years, The White Lab has worked with home brewers and the region's largest beer makers, helping them find the best possible yeast for their brews.

Mr. White explained the chemistry between the yeast and brewers has created innovation. He studied fermentation at the UC Davis and took a biochemistry Ph.D. from the UC San Diego. He started home brewing around 20 years ago with his friends and one of them are the founder of Ballast Point brewery who sold it for $1 billion.\textsuperscript{49}


\textsuperscript{49} Ibid.
The trial and error process between the lab and brewers has allowed the beer community to try lots of different beer styles and to find something wrong in the beer making process. By bringing in trial products to the lab, brewers can analyse them in coordination with the researchers in the lab, which has accelerated the product R&D process in the entire community.50

5.2.4 Consumer Education

San Diego’s brewing industry has contributed to the local economy not only directly from breweries and brewpubs, but also indirectly from the interaction with local tourism. Many large breweries in San Diego actively attract tourists by offering facility tours and providing events and their space. For instance, one of the most famous craft breweries in San Diego, Stone Brewery, becomes the third largest visitor destination in North County after the San Diego Zoo Safari Park and Legoland in October 2012. Most remarkable events are scheduled in the non-peak tourist seasons such as autumn and early spring. (Figure 17)51 In addition, brewery tours have become famous event for tour guide companies. The brewery tourism is promoted by the San Diego Tourism Authority under its visitor website and by providing local breweries’ directory.

**Figure 17 - Most Large-Scale Industry Events in San Diego**

<table>
<thead>
<tr>
<th>EVENT</th>
<th>DATE</th>
<th>Est. Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego Winter Brew Fest</td>
<td>Early February</td>
<td>2,000</td>
</tr>
<tr>
<td>Epic Beer Festival</td>
<td>Mid-March</td>
<td>2,000</td>
</tr>
<tr>
<td>CityBeat Festival of Beers</td>
<td>Late April</td>
<td>2,000</td>
</tr>
<tr>
<td>Beerfest at PETCO Park</td>
<td>Early May</td>
<td>270,548</td>
</tr>
<tr>
<td>San Diego International Beer Festival</td>
<td>Late June</td>
<td>9,700</td>
</tr>
<tr>
<td>San Diego Brew Fest</td>
<td>Early July</td>
<td>2,500</td>
</tr>
<tr>
<td>Stone Brewery Anniversary Celebration &amp; Invitation Beer Festival</td>
<td>Mid-August</td>
<td>-</td>
</tr>
<tr>
<td>Beerfest at PETCO Park</td>
<td>Early September</td>
<td>254,039</td>
</tr>
<tr>
<td>San Diego Festival of Beer</td>
<td>Early September</td>
<td>5,000</td>
</tr>
<tr>
<td>San Diego Beer Week</td>
<td>Early November</td>
<td>29,000+</td>
</tr>
</tbody>
</table>

50 Ibid.
The local university has also promoted this industry. San Diego State University (SDSU) College of Extended Studies created the Business of Craft Beer Certificate to help the enthusiasts to get into the craft beer world through interactive and hands-on learning. The program provides an overall experience of craft beer by teaching the history, trends, beer-styles, and business practices by collaborating with local brewery industry.52

5.2.5 Institute for Collaboration (IFCs)

The San Diego Brewer’s Guild was founded in 1997 to “Promote San Diego breweries” and “Create an open line of communication between brewers”. The association currently is consisted of 110 breweries, 89 “Allied pub members” that serves local craft beers and 122 “Affiliate members” that services brewery such as keg supplier, and thus creating the entire ecosystem. For achieving this mission, they have created the comprehensive maps of pubs and breweries and hosting events to keep craft beer fans happy with 2 annual festivals in San Diego County; San Diego Beer Week in the Fall, and Rhythm & Brews in the Spring. In addition, to build a community of San Diego craft beer enthusiasts, the association created a membership system “The Craft Coalition”. This annual membership is perfect for festival-going, brewery-visiting San Diego beer lovers by discounting rates the association-hosted events and providing preferred notification of all Guild events.53

While the activity has not still been remarkable, a new association has been developed recently. The Craft Beer Association of San Diego (CBA-SD), a new think tank and economic development/marketing consultancy was founded in early 2014 by a group of civic-minded

people who love local craft beer.\textsuperscript{54} CBA-SD seeks to raise the national and international profile of San Diego craft beer. Through education, research, advocacy and marketing initiatives, CBA-SD will support the success of San Diego’s growing craft beer community. Specific organizational goals include bridging gaps with policy makers, elevating out-of-market brand awareness, and strengthening economic development opportunities for the local industry.

5.3 San Diego Beer Highlights and Performance Analysis

The San Diego Beer Cluster has shown tremendous growth, as demonstrated by the increase in the number of breweries and brewpubs between 2011 and 2014 at 165%. While the cluster is supported through the local production and development of yeast by The White Lab, the cluster is not uniquely supported in any other way. This lack of unique institutions with regards to inputs begs the question of what solidifies the competitiveness of the San Diego Beer Cluster against other beer clusters. Additionally, there is great opportunity to expand the distribution of beer produced within the cluster outside of the local San Diego area. The creation of the CBA-SD is a positive indication of recognition within the cluster that there is room for growth elsewhere. The ability of the CBA-SD and other supporting organizations to promote the cluster itself will likely play a great role in increasing the competitiveness of the San Diego Beer Cluster against other beer clusters in the U.S. and abroad.

5.4 The Cluster Diamond

The San Diego Beer Cluster has benefitted from extremely favorable national demand conditions, as consumers have demonstrated a strong affinity towards local craft brews, elevating the craft beer segment by 15%. San Diego specifically benefits from a unique source of talent

that is committed to innovation and development of the cluster. The benefits of this talent can be witnessed in the number of new and existing breweries, as well as supporting organizations. In order to increase the competitiveness of the cluster, attention must be given to the creation or development of supporting industries outside of yeast production and tourism. By addressing this opportunity, particularly within the agricultural sector pertaining to barley and hops, the San Diego Beer Cluster will be able to strengthen its position and further differentiate itself among other beer clusters (see Figure 18).

**Figure 18 - San Diego Beer Cluster Diamond**

5.5 Review and Assessment of San Diego’s Current Strategy

As previously mentioned, the success of the San Diego Beer Cluster is due in part to the changing dynamics of the beer industry at large. Over 2011-2015, US dollar sales of beer have grown at 21% while volume actually declined over the same time period (Figure 19). This information reflects the fact that consumers have shown a strong preference for more upscale craft products.
This inference is confirmed when looking at the growth of consumption within the craft beer segment, at 5% from 2011-2015 (See Figure 20). There are two main potential reasons for why consumers have fueled the growth of the craft beer industry. The first is that consumers are more actively engaged in the authenticity of the products they consume. Because craft beers perpetuate an image of being made locally and in small batches, they are able to capture the attention of consumers seeking an authentically made product. The second reason is that craft beers are an accessible premium product, projecting an image of higher levels of quality than mass-distributed brews.55

A third potential reason exists, as the appeal of craft beer serves to expand the overall market of beer drinkers by appealing to consumers who did not previously consume beer. Mintel research has found that “indications point to continued craft beer growth as product availability

expands and key consumers are engaged. An expanded focus on lighter offerings, while preserving craft authenticity, may increase participation among millennials and Hispanics, who gravitate toward light styles. Positioning products for sharing (in-person and online) can also appeal to these groups, as well as to women.”56 An implication of this finding is that the San Diego Beer Cluster could potentially accelerate growth of the craft segment by specifically targeting these fast-growing consumer groups who have already demonstrated a strong affinity for craft brew products.

Large, multinational brewing companies such as AB InBev and Miller Coors have taken notice and want in on the craft brew craze. In 2015 alone at least 24 craft brew transactions took place, with the vast majority of transactions representing strategic entry points into the craft brew segment by these brewery behemoths.57

This has strong implications for the San Diego Beer Cluster, as it faces stiff competition from other craft beers with larger advertising budgets and higher amounts of resources to instill growth. While the culture of craft beer seems to reject brands who sell out to the industry giants, the implications of doing so aren’t clear. In fact, many consumers may not be aware that their local brew is now owned by a large multinational corporation and still believe that they are supporting a small, local company. In fact, the San Diego Brewers Guild recently indicated strong concern over the future opening of a brewpub by a craft beer brand owned by AB InBev, the world’s largest beer producer. 58 It is clear that as San Diego continues to enjoy success as a

craft brewing hub, it will continue to attract increased competition from craft brews owned by large, multinational corporations who recognize the potential of this cluster.

5.6 Key Challenges and Opportunities for the Cluster

Recommendations

1. Context for Firm Rivalry and Strategy
   a. The CBA-SD should work to establish a brand or marker to distinguish local craft brews from craft brands owned by multinational corporations. This will help to differentiate the cluster from the much larger competitors within the general beer category.
   b. The San Diego Craft Brewers’ Guild should encourage innovation and development of new breweries. The development of new San Diego craft brews will help to prevent potential domination of the market by large multinational corporations wishing to acquire existing San Diego craft breweries.

2. Demand Conditions
   a. The San Diego Brewers Guild and CBA-SD should work together to equip brewers with information around the specific segments to which craft brews appeal. This information can help support the San Diego Beer Cluster to increase demand for its products by appealing to women, millennials and hispanics.
   b. The CBA-SD should continue its work around the branding and marketing of the San Diego Beer Cluster both domestically and internationally. By stimulating demand for its products, the San Diego Beer Cluster will be able to expand its distribution outside of the San Diego region.
3. **Related and Supporting Industries**
   
a. The San Diego Brewers Guild should focus its efforts on determining if the cluster can achieve a competitive advantage or point of differentiation by facilitating superior or local sourcing of other inputs besides yeast (barley, hops, water, flavorings, etc.) or manufacturing materials (cardboard boxes, glass bottles, machinery, etc.).

b. The City of San Diego should explore areas within hospitality that can benefit from the San Diego Beer Cluster and work to facilitate synergies between those industries in order to further establish the reputation and brand of the cluster while contributing to the local economy (i.e. restaurants, bars, hotels, etc.).

4. **Factor Conditions**
   
a. The City of San Diego should act in the best interest of the San Diego Beer Cluster as it supports the local economy and work to hedge against any risk to the industry pertaining to lack of availability of quality water within the state of California.

b. The San Diego Brewers Guild should work to increase local innovation by facilitating events centered around the sharing of best practices and thought leadership as it pertains to the operations of the cluster.