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Brewing Growth

By Neil Reid and Jay D. Gatrell

REGIONAL CRAFT BREWERIES AND EMERGING ECONOMIC DEVELOPMENT OPPORTUNITIES

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INTRODUCTION

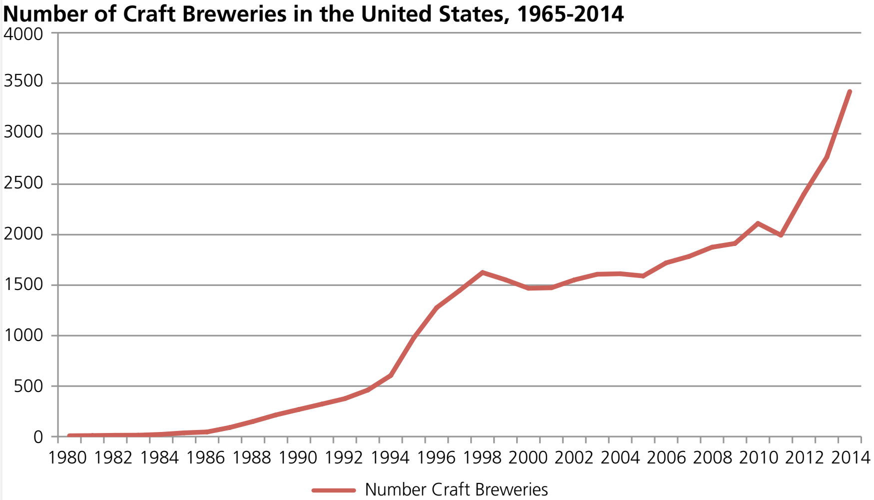
The American craft beer industry is growing rapidly. In 1981, there were only eight craft breweries in the United States. Today, there are over 3,400 (Figure 1). This growth is driven by increasing numbers of Americans (particularly millennials) demanding greater variety in terms of style, flavor, and strength with respect to their beer choices. In 2014, Americans drank $101.5 billion dollars of beer, $19.6 billion (19 percent) of which was craft beer. The majority of craft breweries are relatively small and serve regional or local markets. Ninety-five percent produce less than 15,000 barrels of beer per year. A barrel is 31 U.S. gallons. For comparison purposes, AB InBev (owners of Anheuser Busch) brews around 95 million of barrels annually in the United States alone. As these production figures imply, the character of smaller regional actors, the nature of their business practices, and accompanying opportunities for local economic development differ.

Millennials enjoying a beer after touring the Lagunitas Brewery in Chicago, IL. The growing popularity of craft beer is driven by the millennial demographic.

In an effort to understand the dynamics and opportunities for local economic development, this article accomplishes two tasks. First, the article examines the economic development potential of the largest craft breweries. In the industry, these are referred to as regional craft breweries. They brew between 15,000 and 6,000,000 barrels of beer annually. According to the Brewers Asso-

FIGURE 1

Number of Craft Breweries in the United States, 1965-2014



Source: Brewers Association

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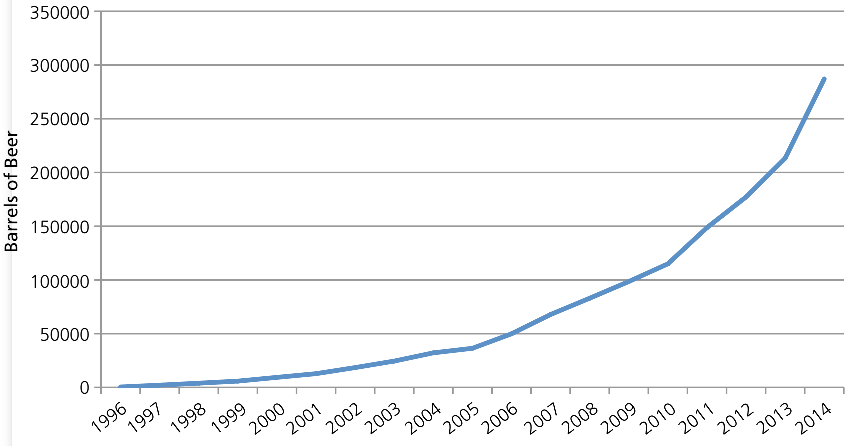
FIGURE 2

Stone Brewing Company Production Volume, 1996-2014



Source: Stone Brewing Company

ciation, the trade group that represents the craft brewing industry, there are 135 regional craft breweries in the United States. Regional craft breweries started out small but have since grown their market and expanded their production capacity (Figure 2).

As regional craft breweries emerge, grow, and expand their footprint in the domestic market (for example Stone Brewing Company in Petaluma, California) an increasing number have invested in a second or third brewing facility. While additional breweries have been constructed primarily to reduce transportation costs to markets that were distant to the original brewery, the popularity of craft beer has also contributed to the growth of an entirely new collection of "destination breweries" or "brewery districts" that also enhance local tourist economies (Aschbrenner 2015). The article's second objective is to identify the factors that craft breweries consider to be important when searching for a location for a second brewery. We believe that there are many regional craft breweries that have not opened up second production locations but may do so in the near future. Understanding their location criteria may be useful to economic development practitioners as they seek to attract regional craft breweries to their locale.

THE GEOGRAPHY OF THE CRAFT BREWING INDUSTRY

The largest geographic concentrations of craft breweries are to be found in the Pacific Northwest (Seattle and Portland), California (San Diego, Los Angeles, San Francisco, Sacramento, and Riverside), the Northeast (New York, Washington, D.C., Philadelphia, and Boston), the Great Lakes (Chicago, Minneapolis, and Detroit), and the Mountain West (Denver) (Figure 3).

Several studies have sought to identify the characteristics of places that seem to be particularly successful in fostering the growth of craft breweries. These found that craft breweries tend to be more numerous in metropolitan areas whose populations exhibit higher levels of social tolerance, and where a greater share of those who live there are young (aged 25-44), educated, and non-Hispanic White. The prominence of 25-44 year olds appears to be particularly important in driving the number of craft breweries found in a metropolitan area (Baginski and Bell 2011, McLaughlin et al. 2015). Yet, as we discuss later, the site decisions associated with secondary production facilities are more complex than market demographics and include a variety of socio-cultural factors.

In contrast to the general category of craft brewers which includes all market classifications (i.e., microbreweries, brew pubs, and so on), the regional craft industry is defined by the extent of the market, broader distribution networks, and larger production capacities than smaller craft houses. Nevertheless, the overall geography of regional craft firms is similar. There are 157 regional breweries in the United States of which 135 are craft. The other 22 are primarily contract breweries that brew beer for other companies. Figure 4 shows the location of these 157 regional breweries. The distribution mirrors the distribution of the major brewing centers (Figure 3). The top five states for regional breweries are California with 22, followed by Colorado, Pennsylvania, New York, and Oregon with 11 each.

FIGURE 3

Top 15 MSAs for Craft Breweries, 2013

Source: Produced using data provided by The Brewers Association

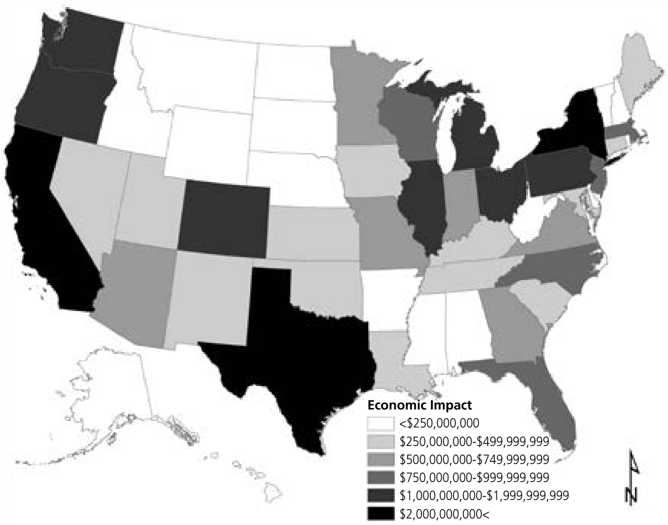
FIGURE 4

Geographic Distribution of Breweries in the United States, 2014

Source: Produced using data from The Brewers Association

FIGURE 5

Economic Impact of the Craft Beer Industry by State, 2012



Source: Produced using data provided by The Brewers Association

REGIONAL CRAFT BREWERIES AND ECONOMIC DEVELOPMENT

In 2012, the industry contributed $33.9 billion to the U.S. economy and was responsible for more than 360,000 jobs, of which 108,400 are individuals employed at craft brewing establishments (Brewers Association 2015). There is, of course, considerable geographic variation in the industry's economic impact. The top five states in terms of economic impact are California ($4.7 billion), Texas ($2.3 billion), New York ($2.2 billion), Pennsylvania ($1.9 billion), and Colorado ($1.6 billion) (Figure 5). One of the few studies of the economic impact of the craft brewing industry at the city scale has been conducted for San Diego, California, where the economic impact is estimated to be in excess of $500 million, which is approximately 1.5 times greater than that of Comic-Con International, the city's largest annual convention (San Diego North Economic Development Council, 2014). Beyond large cities though, the economic impact of craft brewing is not going unnoticed as states like Montana examine pathways to promote and expand the industry (Sorenson and Barkey 2015).

While there are no studies of the economic impact of individual regional craft breweries, a recent Request for Proposals (RFP) issued by Stone Brewing Company provides some insights as to the numbers and types of jobs that such an operation may bring to a community. Stone Brewing Company is headquartered in Escondido, California, the location of its original brewery. Established in 1996, it is the 9th largest craft brewery in the United States. In 2014 it announced plans to open a second brewery in the eastern half of the United States. Eventually, Stone settled on Richmond, Virginia, for its second production location. In addition to a 130,000-square-foot brewery (which would also include packaging and distribution operations), the Stone investment will include construction of a hospitality center that would incorporate both an outdoor garden/dining area and indoor bar/restaurant/retail space (Stone Brewing Company 2014a). At full capacity, the brewery and hospitality center will employ 374 people with hourly wages ranging from $12 per hour to $48 per hour. The total annual payroll is estimated to be $14,476,800 (Stone Brewing Company 2014b).

Expansions planned by other regional craft brewers have the potential to be major contributors to local economies and expand not only the industrial landscape but also local tourism through the design and creation of vast complexes that become "destination breweries". For example, Sierra Nevada's Mills River, North Carolina, facility actually employs more people in the area of hospitality (~150) than in production (90) (Manley 2012; unknown 2015). In short, the impact of immediate investments surrounding construction and new production jobs may be dwarfed by tourism spin-offs.

As implied above, the craft beer industry's potential to shape local tourist economies is not limited to tours of major production facilities or brewery operated hospitality venues. While economic impact (actual or potential) of craft beer tourism has not been documented, there have been a few studies that suggest that it has the potential to significantly contribute to a region's tourist revenue. For example, a 2012 survey of visitors to craft breweries in North Carolina showed that 38 percent were tourists and 36.70 percent of these tourists indicated that their primary purpose for their tourist visit was to visit craft breweries. Furthermore, the majority of these brewery tourists (58.5 percent) said that they were staying overnight, with the average number of nights being 3.16 (Francioni 2012).

Stone Brewing Company's facility in Escondido is one of the most popular tourist attractions in San Diego County. The facility comprises the Stone World Bistro and Gardens as well as Stone Gardens. Unlike seasonal attractions, brewery tourism tends to be year round and, in the case of San Diego, most of the beer-related events occur during off-peak months. Increasing numbers of communities are organizing craft beer weeks that attract visitors as well as locals. An analysis of the 2011 San Diego Beer Week (a 10-day event held in early November)

Craft Beer Weeks are becoming increasingly popular and are targeted towards locals and tourists alike.

TABLE 1

Regional Craft Brewers with Multi-state Locations

Company	Original Brewery	Year opened	Additional Breweries	Year opened (Actual or Anticipated)
Atwater Brewing Company	Detroit, MI	1997	Austin, TX	2015
Boston Beer Company	Boston, MA	1988	Cincinnati, OH* Breinigsville, PA*	1996 2008
D.G. Yuengling	Pottsville, PA	1829	Tampa, FL	1999
Gambrinus	Shiner, TX	1909	Portland, OR* Berkeley, CA	1984 2004
Duvel Moortgat	Cooperstown, NY	1997	Kansas City, MO*	2014
Green Flash Brewing Company	San Diego, CA	2002	Virginia Beach, VA	2015
Lagunitas Brewing Company	Petaluma, CA	1993	Chicago, IL Los Angeles, CA	2014 TBA
New Belgium Brewing Company	Fort Collins, CO	1991	Asheville, NC	2015
Oskar Blues Brewery	Longmont, CO	1997	Brevard, NC	2012
Sierra Nevada Brewing Company	Chico, CA	1980	Mills River, NC	2014
Stone Brewing Company	Escondido, CA	1996	Richmond, VA	2016

*Acquisition of operational or closed brewery.

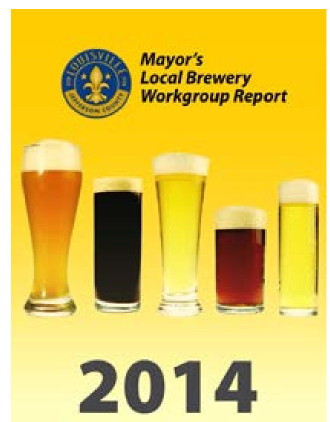
Sources: The Brewers Association and individual brewery websites.

estimated that the event was responsible for 3,612 room nights which generated an additional $469,307 in hotel revenue (San Diego North Economic Development Council, 2014).

To enhance the experience of beer tourists, many communities have developed, or are in the process of developing craft beer trails (think intentional clusters), that provide information about and suggested itineraries for visiting craft breweries. In Mills River, NC, Sierra Nevada's popular "Beer Camp" model, which builds on a collaborative co-branding initiative with smaller craft houses and enables beer geeks to have an extra-ordinary hands-on experience, has also proven to be a lucrative driver of growth – and may indirectly lead to the expansion of local beer culture/industry. Other examples include Columbus, Ohio (Husnick 2015), Kalamazoo, Michigan (Evans 2015), and Louisville, Kentucky.

The case of Louisville is particularly interesting because the idea for a craft beer trail, which mimics the city's popular Bourbon Trail, is the result of a Brewery Work Group convened by Louisville Mayor Greg Fischer in the summer of 2014 (City of Louisville 2014). This report also included other recommendations including reinvigorating some of the city's beer-related traditions that were introduced by the city's immigrant German population during the second half of the 19th century as well as developing some synergies with the region's bourbon distillers.

Regional craft brewers can play an important part in the development of a tourism industry. As witnessed by the popularity of Stone's brewing facilities in the San Diego region, regional craft brewers can function as major tourist attractions in and of themselves. However, it may also be beneficial for local tourism officials to market the regional craft brewery as an anchor (similar to an anchor store in a shopping mall) to draw tourists to a region and then leverage this into visits to additional geographically proximate craft breweries as part of a more comprehensive craft brewer trail. In Traverse City, Michigan, the "trail" model has been modified and the result is a campaign to "paddle" (on open and moving water) to six craft breweries (Ellison 2015). In short, the spin-offs associated with expansion of regional craft breweries have the potential to promote growth across multiple sectors.



Entrepreneurial Mayors like Greg Fischer of Louisville, KY, are keen to strategically promote their city's craft beer industry.

THE SEARCH FOR NEW PRODUCTION LOCATIONS

A small number of the regional craft breweries have production facilities in more than one state (Table 1). As noted here the need for a second production location arises as the brewery is successful, demand for its beer increases, and the geographic footprint of its market expands. As growing breweries ship their product to more geographically distant markets, their transportation costs increase. Beer is made from four basic ingredients – hops,

Not all large regional craft brewers have multiple breweries. Some operate one brewery in their original location. However, in all likelihood, some of these breweries will opt for a second production location in the future. Similarly, smaller craft houses may scale up to be regional competitors and require new locations – even if located in (or near) their home region.

malted barley, yeast, and water. It is the material input of water that adds the most weight and volume to the final product, thus making a relatively bulky and expensive product to ship. Besides, water is a generally ubiquitous raw material and considerable transportation cost savings can accrue when the beer is brewed close to the consumers. Thus when a brewery is located on the west coast and is shipping considerable volumes of beer to markets in the east coast there are considerable savings to be realized if a second brewery is opened in the eastern half of the country (McCurry 2012).

The expanding geographic footprint of these highly successful craft breweries means that they are increasingly becoming national brands. For example, New Belgium Brewing Company's beer is available in 36 states plus D.C., while Green Flash Brewing Company's beer is sold in 40 states. Not all large regional craft brewers have multiple breweries. Some operate one brewery in their original location. However, in all likelihood, some of these breweries will opt for a second production location in the future. Similarly, smaller craft houses may scale up to be regional competitors and require new locations – even if located in (or near) their home region. In concert, these realities represent an investment attraction opportunity for states and communities across the country. With that in mind the purpose of this section is to identify some of the key location factors that appear to be important to regional craft breweries as they look to expand.

When it announced plans for a second brewery, Stone Brewing Company, headquartered in Escondido, California, received more than 200 proposals from communities across 20 states (Moomaw 2015). Stone's site requirements included the typical features such as utility needs and freeway access.

With water being a key ingredient of beer, Stone was particularly interested in the type, availability, and quality of the water. The brewery will use approximately 215,000 gallons of water per day. While water treatment is now standard practice in the industry, water quality and its specific characteristics – hardness, alkalinity, and chlorinity – influence location (see Gatrell et al 2014). Additionally, seasonal swings in mineral content are especially undesirable. As a result, communities responding to the RFP were asked to provide detailed information on their locale's hydrology and the quality of domestic water supply. A brewery is a 24/7/365 operation and Stone was particularly interested in knowing what contingencies a community could put in place if the supply of water was interrupted by contamination for one reason or another (Stone 2014). Access to interstate highways and concerns about water were also important to Sierra Nevada Brewing Company when they were looking for a second production location in the eastern United States (McCurry 2012).

While the Stone RFP provides insights into what might be considered the more traditional site selection criteria that are important to large regional craft breweries, an examination of local media reports provides insights on additional factors that seem to be important but are harder to capture than measuring Ph values and distance to the nearest interstate on-ramp. Indeed, the intangible factors referenced in the media include not only quality of life factors but also broader socio-cultural values and local politics. For example, the decision of Sierra Nevada and New Belgium Brewing Companies (the nation's 3rd and 4th largest craft breweries respectively) to open up second production locations in the Asheville, North Carolina, metropolitan area highlights the importance of these other factors. Like many craft breweries, Sierra Nevada's corporate culture includes a commitment to sustainability, renewable energy, community engagement, and the health and wellness of its employees (McCurry 2012).

As Sierra Nevada narrowed its list of prospective sites from 170 to 60 to 38 to 9, the issue of sustainability became increasingly important. Communities were assessed for their public transportation systems, recycling programs (residential and industrial), and the availability of renewable energy options. Stream restoration initiatives and bike trails were examined. According to Don Schjeldahl, Sierra Nevada's site selection coordinator, "every strategy had to run through a carbon footprint filter." In the end, Sierra Nevada opted for the small community of Mills River, about 20 miles south of Asheville.

New Belgium Brewing Company also chose the Asheville area for their expansion brewery. In conducting their search, they compiled a matrix comprising 30 location factors that were important to them. These included a

Black Cloister Brewery opened in Toledo, OH, in March 2015 is contributing to the revitalization of that city's downtown.

culture of progressiveness, brownfield redevelopment opportunities, a vibrant downtown, and a location that would allow their employees to walk or bike to work. In contrast to Sierra Nevada, New Belgium opted for a location in downtown Asheville. In praising Asheville's downtown, Jenn Vervier, New Belgium's director of strategic development and sustainability, said that "there are so many streets of locally owned businesses, so many independent restaurants. The natural beauty is just stunning. I just got the sense of like-minded people who believe in sustainable development and investing in the community" (McCurry 2012).

The regulatory environment and the ability of government to respond to the needs of an industry can also be important factors for breweries looking to expand into a new state. Laws governing the production, sale, and consumption of beer vary significantly from state to state, with more restrictive laws placing some states at a competitive disadvantage. For example, limits based on the strength of beer that can be brewed (and sold) vary by state. The strength of beer is measured in terms of Alcohol by Volume (ABV). This came into play when Stone Brewing Company was looking for a site for a second brewery. Norfolk and Richmond, both in Virginia, and Columbus, Ohio, were shortlisted as possible locations for the new brewery. In Virginia, there is no cap placed on the strength of beer that a commercial brewery can brew. In sharp contrast, however, in Ohio it is illegal to brew or sell beer over 12 percent ABV. Some have argued that this put Columbus at a competitive disadvantage in the competition to attract Stone (Malone 2014). At the time of writing there is a bill in the Ohio Legislature (House Bill 68) that would raise the state's maximum ABV to 21 percent (Eaton, 2015).

As part of its efforts to attract Stone Brewing Company to South Carolina, Governor Nikki Haley signed the so-called *Stone Bill*. This bill removed a number of restrictions that many felt were hampering the state's competitiveness with respect to growing its craft beer industry. Prior to passage of the legislation, a brewery in South Carolina could not operate on-site restaurants that served food (something Stone planned to do at their new brewery). Breweries were also only able to sell their beer from its on premise taps. The new legislation allowed breweries to put their beer in bottles, cans, and kegs thus allowing customers to take beer home with them. The bill also removed other restrictions placed on craft breweries in South Carolina. Communities must also be willing to adjust in order to be friendly to craft brewers. For example, in 2014 Greensboro, North Carolina, updated their city's land development ordinance that allows microbreweries to operate downtown (Eisenberg 2014).

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TABLE 2

10 Largest Regional Craft Breweries, 2014

Company	Brewery Locations	Annual Output (barrels)
D.G. Yuengling & Son	Pennsylvania, Florida	2,917,992
Boston Beer Co.	Massachusetts, Ohio, Pennsylvania	2,550,000
Sierra Nevada Brewing Co.	California, North Carolina	1,069,694
New Belgium Brewing Co.	Colorado, North Carolina	945,367
Gambrinus	Texas, Oregon, California	675,997
Lagunitas Brewing Co.	Petaluma, Chicago	601,420
Deschutes Brewery	Oregon	337,094
Bell's Brewery, Inc.	Michigan	319,550
Stone Brewing Co.	California, Virginia	287,075
Minhas Craft Brewery	Wisconsin	265,374

Source: The Brewers Association and individual brewery websites.
Note: 1 barrel = 31 U.S. gallons.

As the above items suggest, the historical factors that determine the geography of site selection are changing. Indeed, the traditional concept of a community's "business climate" has now been expanded to include softer cultural factors (i.e., perceived "progressiveness", availability of brownfield sites, sustainability, and so on) and the political will to rapidly respond and revise arcane regulations. Additionally, it is worth noting that secondary production facilities reside outside of the traditional regions associated with the regional craft beer industry (West Coast, Northwest, Great Lakes, and Northeast) and do not necessarily reflect core demographics. Indeed, the secondary sites are distinct from regional home-bases. As such, the opportunities for communities, particularly localities that are able to conceptualize craft beer more broadly as a reflection of their values and culture, are poised to be competitive.

FUTURE EXPANSIONS

In the future, we anticipate that more regional craft brewers will seek second production locations. Table 2 lists the ten largest regional craft breweries in the United States. Three of the ten (Deschutes Brewery, Bell's Brewery, Inc., and Minhas Craft Brewery) brew in only one state. The market area of Oregon's Deschutes Brewery comprises 26 states (Figure 6). The states to which they do not distribute are concentrated in the southeast and northeast of the country. If Deschutes has ambitions to expand into these states, then a second brewery may be-

FIGURE 6

Market Area of Deschutes Brewery

Source: Deschutes Brewery

come desirable. Indeed, there are media reports that Deschutes is considering such an expansion (Furnari 2014). As plans to expand are announced, communities have to be ready to respond.

While considerably more limited in scope, there may also be the opportunity to attract large craft breweries from other countries that may have an interest in expanding their presence in the U.S. market. In June 2015 the Scottish craft brewery, BrewDog, announced that they were constructing a production facility in Columbus, Ohio (Malone 2015). This is good news for Columbus as the city has been one of the finalists for the second Stone brewery. BrewDog is not the first European brewery to build a production facility in the United States. In 2004 Trumer, an Austrian brewery, partnered with American craft brewing company Gambrinus to construct a new brewing facility in Berkeley, California. The brewery produces the company's signature pilsner lager for the American market. Belgian brewer Duvel Moortgat was an investor in Brewery Ommegang that opened in Cooperstown, New York, in 1996. Duvel has since acquired full ownership of the brewery.

CONCLUSION

Whether it's a domestic regional brewer selecting a new second or third production site, an international producer seeking access to the booming U.S. craft beer market, or a more local firm scaling up, the opportunities are concrete. Moreover, beer, unlike textiles or machine tools, has the capacity to produce not only more familiar industry-specific spin-offs (such as smaller craft houses) but to create new revenue streams across multiple sectors. Yet, as this article suggests, economic development professionals will need to leverage a suite of community-based resources heretofore not necessarily associated with the recruitment of manufacturing facilities.

While no doubt decisions around site selection will continue to hinge on inputs, infrastructure, and access, the case of the regional craft brewery suggests the calculus is more complex insofar as the linkages among production, tourism, culture (or perhaps more accurately values), and even the material landscape are critical final determinants that drive decision making.

While no doubt decisions around site selection will continue to hinge on inputs, infrastructure, and access, the case of the regional craft brewery suggests the calculus is more complex insofar as the linkages among production, tourism, culture (or perhaps more accurately values), and even the material landscape are critical final determinants that drive decision making. As a result, the growth of the regional craft beer industry, and American beer culture, has the capacity to reconfigure the site selection process. Similarly, craft beer – unlike "widgets" – can be leveraged to expand tourism vis-a-vis festivals, facility tours, programming, and general hospitality activity.

Like other industries, a cluster of smaller craft breweries, anchored by a regional craft brewer, has the potential to create a unique zeitgeist for a particular locale and thereby enhance a region's overall competitiveness. As such, economic development professionals, politicians, and the community will need to think differently about site selection opportunities and the ways in which regional craft beer and perhaps other industries – like spirits – or specific firms in a specialized industry, such as Longaberger in Ohio, might leverage corporate site decisions to enhance the overall viability and sustainability of regional economies.

Lagunitas Brewing Company whose original brewery is in Petaluma, CA, opened a second brewery in Chicago, IL, (pictured) in 2014.

This beer menu at the Bell's Brewery in Kalamazoo, MI, exhibits the variety of beer styles brewed by craft breweries.

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