


A large, modern brewery interior with tall glass walls, industrial equipment, and people socializing. The space is filled with large, rustic wooden trees and string lights, creating a warm and inviting atmosphere. People are seen sitting at tables and standing near a bar, enjoying the environment. The overall design is a blend of industrial and natural elements.

Changing Is Brewing

Shifting tastes and increased competition in the global beer industry create project



Customers at the opening of
Stone Brewing's new brewery
in Berlin, Germany

e wing

opportunities—and new risks. **BY MATT ALDERTON**



Beer might be one of the world's oldest alcoholic beverages, but it's far from stale.

In the last two decades, global beer production has increased nearly

50 percent.

Source: Transparency Market Research

New markets and changing tastes are transforming the brewing industry more than 5,000 years after its inception. In the last two decades, global beer production has increased nearly 50 percent, reaching about 2 billion hectoliters (1.7 billion barrels) in 2015, according to Transparency Market Research. Global beer sales are projected to increase 6 percent annually in the coming years, reaching US\$688.4 billion by 2020, according to Allied Market Research.

The upshot for breweries is clear: They're launching projects to increase production, boost efficiencies and deliver standout products in an increasingly competitive market. Up-and-coming organizations are learning to brew at new scales. U.S. craft brewer Lagunitas Brewing Co. simultaneously launched projects to build a third brewery—a 250,000-square-foot (23,226-square-meter) facility in Azusa, California USA that will open in 2017—and increase production by 67 percent at its original brewery in Petaluma, California, USA (see “What’s On Tap?” page 37).

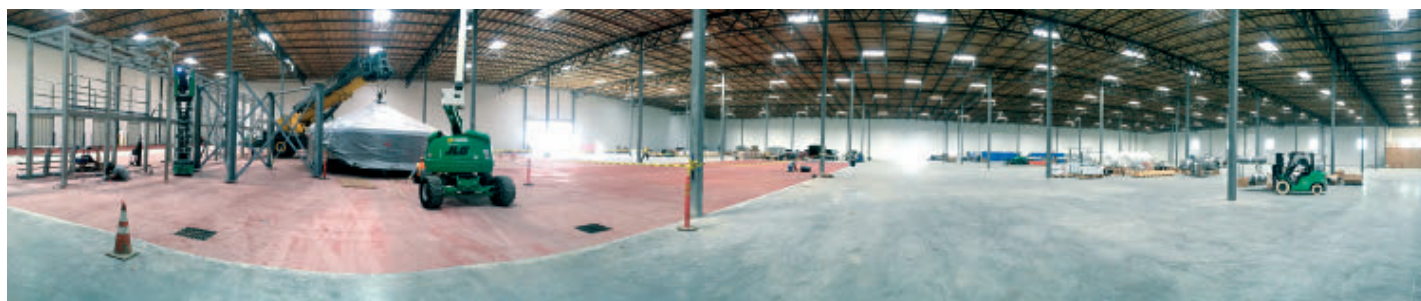
Consolidation is the trend for global heavyweights, with a US\$106 billion merger of the world's two largest brewers—Anheuser-Busch InBev and SAB-Miller—underway. To compete globally, other large beer companies are looking to fine-tune operations to maximize value. For instance, Carlsberg Group recently completed an IT project that helps the organization build and manage a scalable supply chain for its 140 brands and 80 breweries around the world—from the Baltics to Beijing.

“Multinational brewing companies need to adapt their processes, strategies and products to focus on the new consumer, who demands a beer with the highest quality standards,” says Nelson Sanabria,

PHOTOS COURTESY OF LAGUNITAS BREWING CO.



Lagunitas Brewing Co.'s current facilities and its new brewery, below



PMP, lead—regional project management office Latin America, SABMiller, Bogotá, Colombia. “Strong project management can be a differentiating factor to help make the business meet its objectives.”

As the industry rapidly evolves and organizations scale up, project professionals are tending to crowded risk registers and stakeholder landscapes to ensure benefits are realized and the beer keeps flowing.

TASTING RISK

Maintaining production was front of mind for Zachry Construction Corp. when it launched an 18-month project in November 2014 to expand historic Spoetzl Brewery in Shiner, Texas, USA. The 18,958-square-foot (1,761-square-meter) expansion, completed in 2016, doubled the brewery's output with a new three-story steel-frame building built adjacent to the existing brewhouse.

“Sponsor expectations were clear that construction shall not interfere with beer production,” says Chris Jaworski, senior project manager, Zachry Construction, San Antonio, Texas, USA. “This was challenging because a lot of the infrastructure that serves the existing brewery—the main fiber, the

main water and some of the main drain lines—was in the footprint of the new building.”

For instance, more than 200 piers that support new brewing vessels had to be installed around existing utilities—without shutting them off. So the project team overlaid the planned pier installation on a survey of the existing infrastructure. The review helped the project team mitigate risks such as broken water lines, which, in addition to stopping the flow of beer, would have added time and expense to the project, Mr. Jaworski says.

Another production risk was contamination. The team installed plywood and plastic partitions to segregate the construction and production sites and prevent debris such as drywall dust from getting into beer and ingredient supplies. “We had to plan on achieving a certain level of completion in the new facility before making the connection to the old facility,” he says.

Project managers in the beer industry also must mitigate delays caused by changes in organizational strategy, new government regulations or supply-chain interruptions—such as availability of new brewing equipment. Those surprises “can drastically change the scope of a project, in turn affecting delivery times and increasing costs,” Mr. Sanabria says.



“Multinational brewing companies need to adapt their processes, strategies and products to focus on the new consumer.”

—Nelson Sanabria, PMP, SABMiller, Bogotá, Colombia



"I truly believe that the first step in change management is to have top management on your side. If the process owners don't buy into the idea, you won't be able to have effective change management."

—Mónica Camacho, Grupo Modelo, Mexico City, Mexico

Brewers can mitigate supply risks early by engaging subject-matter experts who can help organizations quantify their needs, compare them to available resources and identify gaps to assess cost impacts and define remediation strategies, says Joe DeMent, director of programs and operations, Stone Brewing Co., Escondido, California, USA.

Project managers often must pad their schedules with extra time to account for delays, he says. A realized risk can quickly create a cascade of issues. For instance, a lack of brewing equipment or skilled labor shortages, such as equipment installers, can result in longer lead times, Mr. DeMent says.

“As the entire craft beer industry grows in both number of players and production capacity, other dependent resources are stressed,” he says. “We identify constraints in suppliers, equipment or skilled labor, and respond tactically by finding alternatives or supplements wherever possible.”

A PINT OF PLANNING

Every beer needs the right blend of ingredients, and every beer project needs the right stakeholders to work in tandem. Whether it’s senior executives focused on business objectives, brewmasters zeroed in on recipe and equipment requirements, legal experts who identify regulatory issues or engineers who know building requirements, project managers must get all of them on the same page to complete tasks on time.

“Misidentification of stakeholders results in inaccurate scoping, which will result in the delivery of a project that does not correspond to the needs of the business that requested it,” Mr. Sanabria says.

Fast-growing craft breweries are learning how proactive stakeholder management can boost project planning. Zachry Construction had to coordinate with Spoetzl’s brewing experts from the very beginning in order to incorporate their requirements into the construction plan.

For instance, nine tanks—all larger than some

Pour It On



2 billion hectoliters (1.7 billion barrels)
Worldwide annual beer production

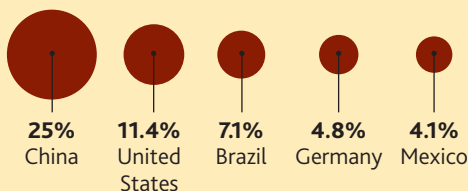
US\$485.2 billion
Global beer sales in 2014

US\$688.4 billion
Global beer sales by 2020



More than 10,000
Number of craft breweries worldwide

Countries with highest percentage of global beer production (2014)



Source: 2015 Kirin Beer University Report, Kirin Holdings

automobiles—had to be installed mid-construction because of their immense size. That meant the project team had to synchronize planning and installation with all stakeholders, Mr. Jaworski says. The construction team produced a 3-D model to identify any design or coordination flaws—then engaged the design team early on to modify the tank installation plan.

“We did the slab-on-grade, but we couldn’t finish the structure on levels two and three until the tanks came in because we had to literally drop them in and then build the rest of the structure around them,” Mr. Jaworski says. “For that reason, it was a closely coordinated project between the

construction team and the owner’s team.”

RECIPE FOR CHANGE

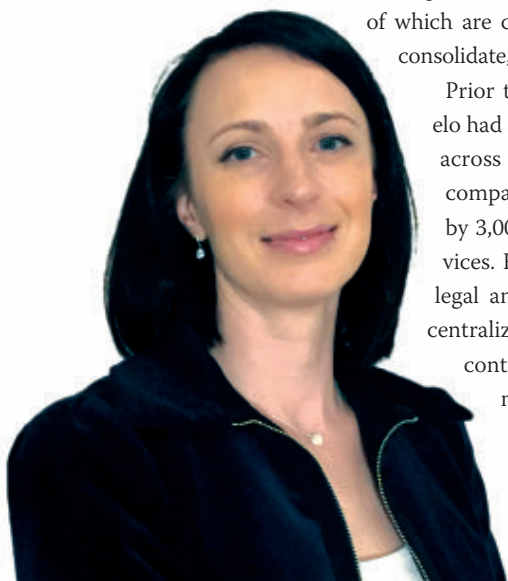
As breweries expand and compete globally, they are adopting standardized project management practices to facilitate increased efficiencies.

“The principles of project management provide a roadmap toward successful outcomes and provide rigor and governance to business units as they journey through change management in all of its forms,” says Melanie Watson, project manager, product commercialization, Carlton & United Breweries, Melbourne, Australia. “Leveraging global intellectual property, best practices and shared learning helps deliver financial benefits and speed



“Leveraging global intellectual property, best practices and shared learning helps deliver financial benefits and speed to market.”

—Melanie Watson,
Carlton & United Breweries,
Melbourne, Australia



to market. Couple this with clear processes that are unambiguous and easily applied, and the pathway is clear to achieving higher rates of project success.”

Centralized project management was one of the immediate benefits when Grupo Modelo was acquired by Anheuser-Busch InBev in 2013, says Mónica Camacho, project manager, Grupo Modelo, Mexico City, Mexico. In particular, the organization infused standardized methodology, as well as documentation and sharing of lessons learned, she says.

“Having a standard methodology helps us reduce the time of project planning and give standard information to our different stakeholders and steering boards, which helps them to make decisions more effectively. Furthermore, the standardized methodology has helped us to keep track of the project in a proper way and to be able to measure the benefits as an outcome of the project.”

Change management is critical to optimize operations, reorganize staff or automate workflows—all of which are common when beer companies consolidate, Mr. Sanabria says.

Prior to its acquisition, Grupo Modelo had approximately 5,000 employees across Mexico. Since the deal, the company has reduced its workforce by 3,000 by centralizing business services. For instance, human resources, legal and corporate affairs have been centralized to lower costs and increase control—allowing breweries to be more productive with fewer resources, Ms. Camacho says.

“When it’s difficult for employees to accept an initiative, you have to show them how it will make their life better,” she says. “The way I do that is by thinking like them. How would I feel if I were being asked to do my job completely differently? I truly believe that the first step in change management is to have top management on your side. If the process owners don’t buy into the idea, you won’t be able to have effective change management, and most of the time this can jeopardize the project’s outcome.”

The value of centralized project management isn’t lost on craft brewers, either. Since Stone Brewing established its project management office in 2013, the benefits have included enhanced requirements gathering, improved communications, formal financial control mechanisms and increased transparency, Mr. DeMent says.

Clear training and communication plans are key to achieving promised benefits, Ms. Camacho says.

“We have a specific forum with people to keep them informed about the new process release and give them training at the correct time,” she says. “These processes are released at different times for different regions, so we have to plan a rollout according to the complexity and volume of the operations. So, regional rollouts and meetings with end users before the project release are key factors for success.”

The ultimate goal isn’t just improving results for the business; it’s also improving outcomes for employees—who are the foundation on which all beer projects rest, she says.

“If you don’t have people, you can’t make beer.”

What's On Tap?

To help quench the world's thirst, breweries around the world have launched expansion projects.

1

LAGUNITAS BREWERY #3

Location: Azusa, California, USA

Budget: US\$35 million-US\$50 million

On tap: The 250,000-square-foot (23,225-square-meter) facility will be the third brewery for Lagunitas, the sixth-largest craft brewer in the U.S. It will include a 5,000-square-foot (465-square-meter) taproom and a 300-seat amphitheater.

Last call: Scheduled for completion in 2017

2

HEINEKEN ITUMBIARA BREWERY

Location: Itumbiara, Brazil

Budget: BRL650 million

On tap: The world's third-largest brewer, Heineken, is building its seventh Brazilian brewery to expand production in the country by 3.6 million hectoliters (3.1 million barrels) per year.

Last call: Scheduled for completion in 2018

3

CONSTELLATION BRANDS MEXICALI BREWERY

Location: Mexicali, Mexico

Budget: US\$1.5 billion

On tap: A new brewery project in this border town will boost Constellation Brands' supply chain to two of its biggest markets—Mexico and the U.S. state of California. The facility's design enables the company to potentially double production from an initial 10 million hectoliters (8.5 million barrels) as demand grows.

Last call: Scheduled for completion by 2021

1

3

4

2

5

4

BRASSIVOIRE BREWERY

Location: Abidjan, Ivory Coast

Budget: XOF100 billion

On tap: Heineken's newest brewing facility, a joint venture with trading firm CFAO, will produce 1.6 million hectoliters (1.4 million barrels) each year.

Last call: Scheduled for operation by 2017

5

CHONGQING BREWERY YIBIN

Location: Yibin, China

Budget: CNY330 million

On tap: No country consumes more beer than China, where a new brewery by Carlsberg Group—operating under Carlsberg's Chinese subsidiary, Chongqing Brewery—will produce 3 million hectoliters (2.6 million barrels) of beer a year.

Last call: Scheduled for operation by 2017



CASE STUDY

Pipeline for Growth

A Belgian brewery went underground for an unprecedented expansion project.

“People thought [building an underground pipeline to transport beer] was a joke.”

—Xavier Vanneste, De Halve Maan, Bruges, Belgium

De Halve Maan had a logistics problem. The brewer’s bottling facility in Bruges, Belgium was 3 kilometers (1.9 miles) from its production plant. The company’s large tanker trucks weaved through the narrow streets of the medieval city to transport beer to the bottling facility, creating operating inefficiencies at a time of increased demand for its beer.

Moving either facility wasn’t an option. The brewery has a long history in its present location, and there was no room to build an adjacent bottling plant. Instead, Xavier Vanneste, owner and managing director of De Halve Maan, took a different route. His company built an underground pipeline to transport the beer.

“People thought it was a joke,” Mr. Vanneste says. “Nobody thought it would really be possible to do something like that.”

Yet the five-year, €4 million project was completed on time and on budget in August—thanks to a project team that effectively managed a constant flow of risks, requirements and stakeholder concerns. The planning phase alone lasted nearly four years, as the project team engaged with technical and legal experts to ensure such a pipeline was even feasible.

The most basic risk involved the beer: It had to remain tasty and safe to drink. So the team relied on rigorous testing by the company’s beer engineers to determine how pipeline materials, sanitation and pressure would impact the beer.



No changes were made, so the testing validated the team’s original decision-making.

On the construction side, the brewery engaged engineers and public works officials. “You have to talk about what technology is being used, what underground drilling techniques are available, the track that will be followed and the eventual obstacles you will meet. That’s one big technical point,” Mr. Vanneste says.

The team examined previous projects to determine how existing infrastructure would impact where to dig and how to install the pipeline, he says.

“We decided on a track that was quite deep—the average depth is more than 2 meters, and at some



"Having this pipeline means we now have the capacity to be leaner, to be more efficient, to brew more beer and, eventually, to grow."

—Xavier Vanneste

points even 35 meters—because the deeper you go, the less potential obstacles you will meet."

But there were legal obstacles. It was the first time a private company had asked the government to approve such an underground project, so no framework existed beyond what already applied to projects for public-service utilities. The project team had to identify the right mix of government administrators and politicians who could clear the way—and then convince them this project deserved an exception.

For instance, the government worried that the pipeline project would set an undesirable precedent—encouraging scores of other companies to seek to tear up the streets of Bruges for private infra-

structure. Through a series of meetings, the project team illustrated to stakeholders the project's public benefits, such as decreased traffic and pollution.

"Because big tanker trucks will not have to come into the city anymore to transport our beer, there is a reduction in the carbon footprint of the brewery and of our environmental impact on the city in terms of security, noise and traffic," Mr. Vanneste says.

In the end, the project also was a boost to De Halve Maan's growth strategy, he says.

"Knowing the logistical challenges we faced, it was clear that continuous growth of the brewery would be difficult in the future. Having this pipeline means we now have the capacity to be leaner, to be more efficient, to brew more beer and, eventually, to grow."



CASE STUDY

Destination: Berlin

A U.S. brewer builds a new site in Germany—and discovers a world of regulations.



“The relationships we developed with other craft brewers who had preceded us on this path of expansion were invaluable.”

—Joe DeMent, Stone Brewing, Escondido, California, USA

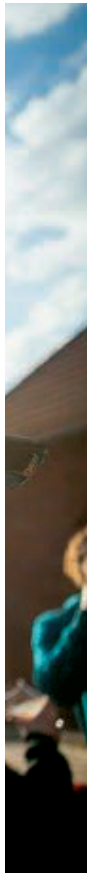
Building a new brewery is a big deal for any small beer company. But the stakes were even higher for U.S.-based Stone Brewing Co. when it launched an expansion project in a brewing promised land: Berlin, Germany.

To create the first-ever European brewery built, owned and operated by an independent U.S. craft brewer, project managers at Stone Brewing faced a torrent of requirements and risks beyond the country’s famously restrictive brewing regulations. The two-year, US\$25 million project, which launched in 2014, converted a historic, 115-year-old gasworks complex into Stone Brewing World Bistro & Gardens, a nearly 26,000-square-foot (2,415-square-meter) brewery and restaurant. The brewing complex also includes four smaller buildings housing offices and other support operations, including a packaging and distribution hall and an event space in a historic train repair building.

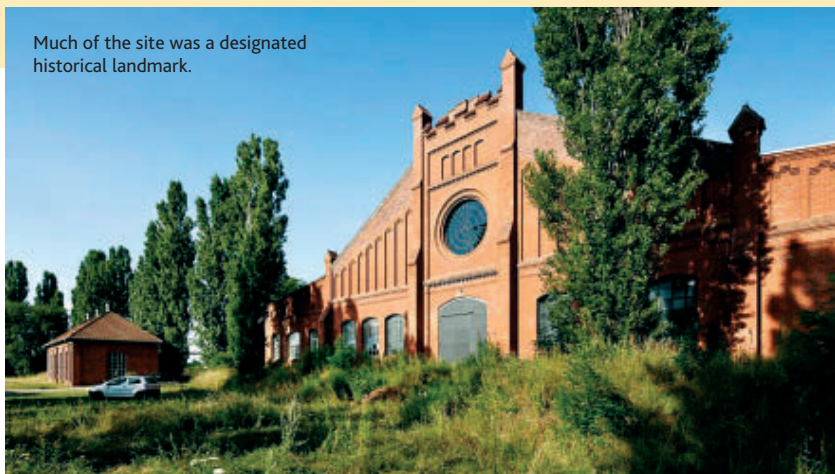
“Much of the site was a designated historical landmark, with buildings originally built more than

100 years ago, so there were special challenges with finding historical documents that described the original methods of construction that were used,” says Joe DeMent, director of programs and operations, Stone Brewing, Escondido, California, USA. “Along the way, we also encountered numerous unique challenges having to do with historical, structural or environmental factors that were simply unknown until they were discovered.”

For instance, the team uncovered an unmapped network of underground piping, which slowed works on utilities and roads. There were extended periods of below-freezing weather, which impacted work on foundations. Structural anomalies within the building required remediation in accordance with Berlin’s building codes. And a limited availability of critical subcontractors and suppliers meant the project team had a constant need to plug talent gaps. Despite this glut of obstacles, the project was completed just four months behind the original schedule, says Pat Tiernan, COO, Stone Brewing, Escondido, California, USA.



Much of the site was a designated historical landmark.



PHOTOS COURTESY OF STONE BREWING CO.

During the planning phase, project leaders made site visits to numerous other craft breweries that had completed capacity expansion projects and were willing to share lessons learned. To ensure the project met all regulatory requirements, the project team engaged with German legal experts. Stone also recruited German talent to fill key team roles on the project team, such as the director of brewing operations.

“Some of the lessons we applied to our projects included the structure of the project teams, a significant number of technical do’s and don’ts, and perhaps most importantly, what mistakes had been made that we wanted to be on the lookout to avoid,” Mr. DeMent says. “The relationships we developed with other craft brewers who had preceded us on

“Coming up with creative solutions and driving the schedule forward despite challenges is fundamental to the role of our project managers.”

—Michael Kaiserauer, Stone Brewing, Berlin, Germany

this path of expansion were invaluable. We were able to adapt our approach accordingly.”

Ultimately, the project came down to the team’s commitment and creativity.

“Dealing with delays, coming up with creative solutions and driving the schedule forward despite challenges is fundamental to the role of our project managers. It’s part of how we define success,” says senior project manager Michael Kaiserauer, Berlin, Germany. “We used traditional project management tools like charters, budgets, change controls, work breakdown structures and Gantt charts to plan and control this project. These tools enabled us to manage most ‘normal’ challenges that come up. The more unique challenges required flexibility and hard work.” **PM**