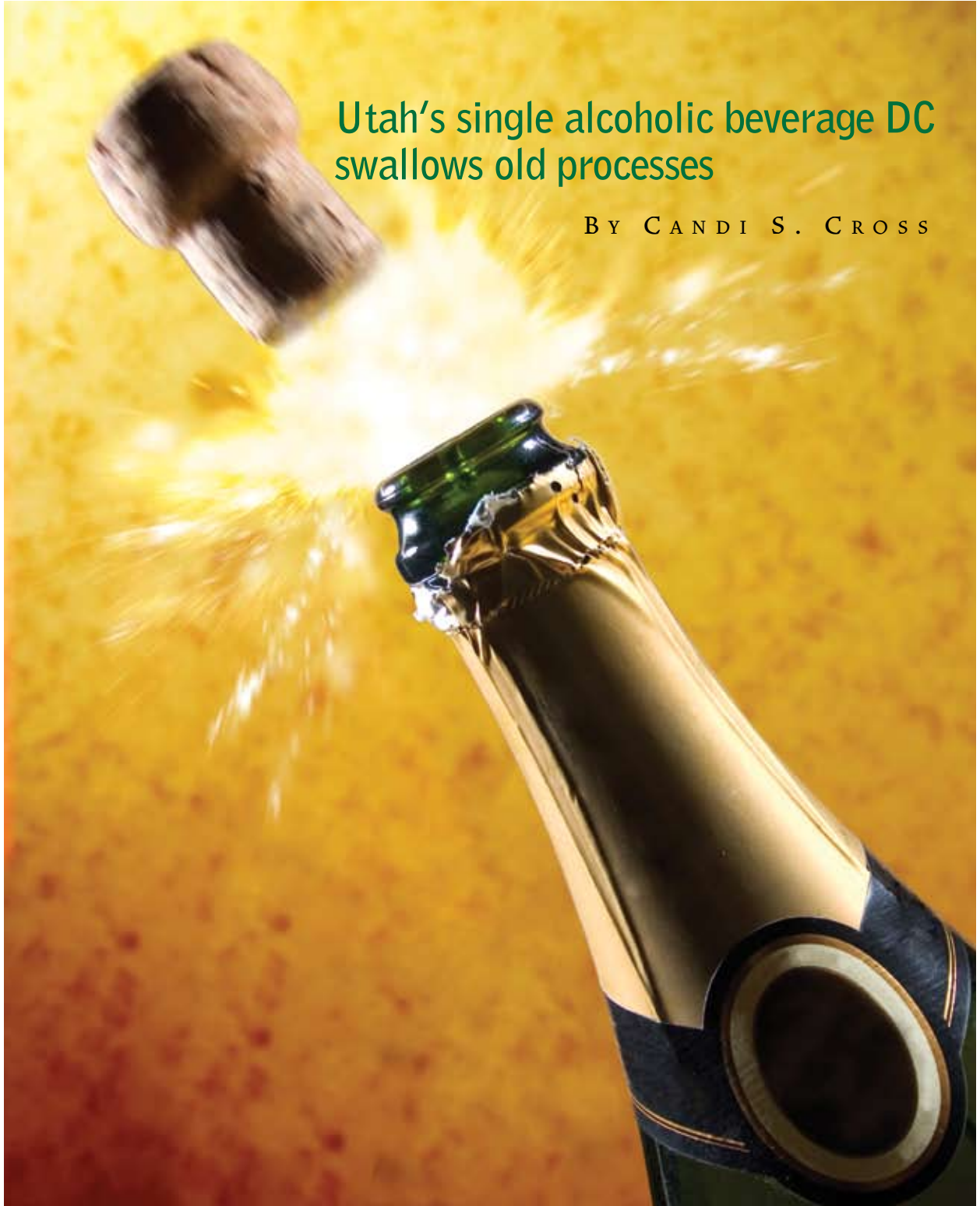


# *A taste for*

Utah's single alcoholic beverage DC swallows old processes

BY CANDI S. CROSS



# perfection

Signs of the holiday season can usually be found where epicureans are breaking bread or clinking glasses. It's hard to tell whether you'll see more mugs or stemware between now and the start of 2008 since the number of sips may be a tie between wine enthusiasts and beer lovers. Supply chains began the process months ago of filling the pipeline with drinks for upcoming seasonal occasions.

Amidst this holiday influx of alcohol supply vehicles on the roads, in the air, and on the sea, Utah doesn't typically spring to mind. In fact, the state has attracted criticism due to the effort it takes to get a drink.

The state has tried to ban alcohol advertising in the past, prohibits bartenders from pouring double shots, bans restaurant workers from suggesting alcoholic beverages, and requires that bars serving beverages stronger than 3.2 percent alcohol be private member-only clubs.

Yet despite extensive regulations, more than \$986.55 million is poured into the state economy annually by the beer industry alone. Brewers, beer importers, distributors, suppliers, and retailers account for 12,519 jobs, according to the National Beer Wholesalers Association.

And what really stands out about the beverage business in Utah is that all spirits, wine, and beer containing more than 3.2 percent of alcohol is distributed from a single facility.

If you're wondering how one establishment could have the capacity to store this inventory, ensure quality, provide a distribution system that allows the state to regulate where and how alcohol is sold, and secure payment upon invoice, your assessment may match the old Utah Department of Alcoholic Beverages Control. In one year, the facility has doubled its capacity and improved process flow through a rack-supported automated storage and retrieval business model. It has also gone from existing in a 25-foot low-bay facility to nearly tripling service capacity in a 110-foot-tall facility.

## Controlling for a variable

The upgraded alcohol distribution facility in the heart of Salt Lake City is the setting of a dramatic story. It started during the holidays a few years ago when alcohol practically leaked from the roof because the inventory was packed in so tight. Fifty employees scrambled to meet demand while operating in

unsafe conditions. More than 6,000 square feet of rail docking was out of service. The back of the property had no truck access for loading. Inventory crowded over into the footpath aisles of the warehouse.

"Life safety issues are always of most concern to the state. During the holiday season when vital areas of the old warehouse were blocked with merchandise and strobe lights could not be seen, we knew that the problems had to be addressed immediately," said Dennis Kellen, director of Utah Department of Alcoholic Beverage Control. "Issues of stacking pallets of merchandise on top of each other and stacking different merchandise in front of other products also caused confusion and disruption during the busy seasons."

Along with the holidays, the state had to prepare for hosting the 2002 Winter Olympics and the 70,000 to 80,000 visitors expected in or near Salt Lake City every day for 17 days. And as many a host has found, grumbling will be heard if celebratory spirits aren't forthcoming.

At the time, with alcohol sales volume increasing faster than projected, temporary space was the only alternative to address distribution center worker safety issues, increase productivity, decrease the product breakage that equaled 1 percent of sales, and lessen the opportunity for inventory to get lost within the warehouse.

A solution to Utah's alcohol storage and distribution challenges would not lead to the additional facilities that industry experts suggested for shorter order process time and larger pallet capacity. The state's longstanding commitment to alcohol control began more than 70 years ago with the addition of Section 2 to the 21st Amendment, which gives states the authority to regulate the production, importation, distribution, retail sale, and consumption of alcohol beverages inside their borders.



## a taste for perfection

Congress recognized the importance of maintaining effective state alcohol regulation. It allows states the flexibility to deal with regional circumstances. “A one-size-fits-all approach to alcohol regulation simply doesn’t work,” states the National Beer Wholesalers Association in a briefing on the American beer distribution system. “People in New York feel very differently about alcohol than those in Kentucky.”

The point reinforces Utah’s state rights. According to the Utah Department of Alcoholic Beverage Control, “The purpose of control is to make liquor available to those adults who choose to drink responsibly but not to promote the sale of liquor. By keeping liquor out of the private marketplace, no economic incentives are created to maximize sales, open more liquor stores, or sell to underage persons. Instead, all policy incentives to promote moderation and to enforce existing liquor laws is enhanced.”

Moderation can be strongly enforced by keeping systems design challenges, team dynamics, task integration, technology installation, and inventory control bound to one location, explains Kellen.

Bidding for distribution center reconstruction started immediately. Three teams submitted proposals on how to implement the state’s specifications. A selection committee of five people established by the state made the final decision on who was awarded the bid.

Construction challenges and ensuring proper work flow during the change would prove to be less difficult than initial development of the specifications and the selection of the project team. The team would consist of the general contractor, the architect, and the equipment supplier that specialized in beverage and bottle requirements. This group would be responsible for turning over a working automated warehouse that met all the state specifications in one year. They would also be required to participate in weekly (at minimum) meetings with the state to report progress and discuss any problems that needed to be addressed.

As part of the proposal process, each team was required to give the state a cost for preventive maintenance, repairs, cost of parts, and maximum length of time the system would be nonfunctional for any one issue. In the end, Daifuku America Corp. was selected. There was no doubt as to Daifuku’s expertise. The company installed Japan’s first automated storage and retrieval system, developed the world’s first computer-controlled one, and engineered the first two-crane synchronized automated storage and retrieval system. More than 20,000 global installations are credited to the company.

In Salt Lake City, Daifuku supplied a three-year parts and labor warranty to include a supply of the most critical parts for inventory and maintenance. As a post-contract incentive, the state negotiated a continuing preventative maintenance contract and an hourly contract for system failure problems.

### At the heart of growth

In truth, alcohol did not leak through the roof during the holi-

## BRING ON THE BUBBLY

What do children and champagne have in common? At 18 months, they’re both at the most important stage of development, when the first taste of independence is truly felt. Champagne has grown from a grape and has been processed, fermented, labeled, and stored in a case ready to be shipped. The cases are then shipped via common carrier to distributors and wholesale partners in each state. They distribute the product to restaurants and retailers. Particularly during the months of November, December, and January, the champagne’s journey ends at the mouths of celebrators thousands of miles from member companies that make up the Union of Champagne Houses of France. More than 90 percent of the champagne exported worldwide originates from these member companies, which joined together in for the purpose of fighting the grapevine pest *phylloxera* and to control the way the word *champagne* could be used worldwide.

The champagne-making business is a complex one for many companies that are bound by long production-to-profit timetables, investment group interests, alcohol control standards, export/import regulations, land statutes, and ever-changing environmental factors such as climate and geography. For members of the privately owned Champagne Houses, each brand must distinguish itself from the others by a diversified grape supplier and unique winemaking techniques.

Having a consumer base in the United States, Korbelt competes with the exporting houses with recognized names such as Taittinger, Veuve Clicquot, and Moët & Chandon. Korbelt’s focus on distinction has resulted in the sales of approximately 1.3 million 9-liter cases annually. Sixty percent of sales (over 750,000 cases) are during the months of October, November, and December.

“The *méthode champenoise* is the only process that Korbelt has used in its more than 125 years of champagne-making. The secret to the perfect, pinpoint bubbles seen in every glass of Korbelt California Champagne is the *méthode champenoise*. The exacting steps of this seem-

ingly magical process begin as the still wines undergo a second fermentation," said Margie Healy, assistant vice president at Korbel.

"Because the second fermentation takes place in the same Korbel bottle that will be opened and enjoyed, the carbon dioxide becomes well integrated with the wine. This process produces smaller bubbles that rise more slowly and last longer than those in champagnes produced by other methods. Remember, the smaller the bubbles, the finer the champagne!"

Healy explains that two other methods are used to create sparkling wines: the transfer method and the Charmat process. Both methods, however, are considered less exacting than *méthode champenoise* because of the way the wine is transferred to large tanks during and/or after the second fermentation.

The champagne-making business among the Champagne Houses is taking a serious hit from economic risks associated with great demand for the bubbly in China, India, and Russia and less territory for the viticulture process. According to a recent report by ABC News, the champagne region is limited by French law to fewer than 150 square miles yet even the shortage will not result in vineyard expansion or the switch from age-old, inefficient methods such as handpicking grapes to more modern winemaking processes.

Korbel's challenges may not be as dooming: "Unfortunately, for most of the risks, we have no control. These risks include strikes, transportation issues such as road closures," said Healy.

It takes 18 months to make a bottle of Korbel Brut, starting with picking the grapes.



The president and owner of Korbel Champagne Cellars is Gary Heck, whose family has owned Korbel since 1954.



Blending and bottling of Korbel products takes place at the widely toured headquarters in Guerneville, Calif., on the Russian River in Sonoma County.

## a taste for perfection



Left to right: While building the new site for the Utah Department of Alcoholic Beverage Control, system designers worked with mechanical and snow-load considerations between 106-foot high-rise and 32-foot conventional buildings. A new site for the Utah Department of Alcoholic Beverage Control will have the capacity for 10,000 pallets by 2010. The new site for the Utah Department of Alcoholic Beverage Control will include improved load-handling ergonomics and steel-reinforced plastic pallets for longevity and cleanliness.

days, the Winter Olympics, or the heavy construction. The Olympics by themselves had only a short-term impact on alcoholic beverage sales.

“The long-term effect of people discovering the state and what it has to offer is a large contributor to the increased demands for liquor products and services. The demographics of the state of Utah have been changing for some time,” said Kellen. “Companies moving into the state with employees who have different lifestyles and different consumption habits have had the greatest impact. Tourism after the Olympics has also been a big influence. In the last 12 months, case sales have increased over 9.5 percent and the forecast is for it to continue,” he noted.

The Department was not forced to look for outside storage during the construction phase of the project. According to Kellen, employees loaded up the retail stores and in essence created 36 mini-warehouses throughout the state that took the pressure off the main warehouse. With large pools of inventory safely stored and available for purchase in various locations, suppliers kept their own processes stable.

Favorable weather conditions for construction throughout the project duration ensured stability in the development phases. Even the most complicating engineering feats, including the “hybrid solution,” stayed ahead of schedule.

Daifuku’s hybrid solution integrates conventional and automated material handling systems. The unique automated storage and retrieval system handles only full pallets of merchandise both in and out of the facility. The individual case picking for supplying the stores is done in the old warehouse, manually with radio frequency scanning guns directing man-on-board electric pallet jacks to pre-assigned SKU picking slots.

By organizing the bulk storage product in a temperature-controlled first-in, first-out storage and retrieval warehouse, the state has established savings in human capital, breakage, and efficiencies. An additional benefit of the air-conditioned facility is enabling extended storage of high-quality wines and boutique beers, where the beers stored in non-conditioned warehouses can lose quality.

The hybrid system has been in place for nearly four years. There are fewer employees, limited downtime, less bottle breakage, and better inventory control. However, the best benefit realized, according to Kellen, is that the life safety issues disappeared with the old building and old processes.

“An additional 4,000 pallet positions can be added with very little interruption to the present system. This expansion will enable utilizing 100 percent of the site footprint available for facilities, supporting projected operations through 2025. In the future, continuing improvements to picking, handling, and information technology will keep UABC in this facility and continuously improve customer service,” said Kellen. ~

### ON THE WEB

## SIX SIGMA HAS NOSE, LEGS

Increasingly, popular wines are given quirky names. Vampire’s Blood California Cab, and Marilyn Merlot and the Naked Grape are just a few monikers found in crates all over the world. How saleable is one of industrial engineering’s signature business improvement models as a brand in winemaking? California-based Six Sigma Ranch and Vineyards is leaving no grape uncrushed in the center of America’s busiest wine region. Drinkers can expect quality that can only be achieved through proven data-driven principles, says the winemaker.

[www.iienet.org/magazine/nov07/winery](http://www.iienet.org/magazine/nov07/winery)