

Using Data for Continuous Efficiencies

Ways to unearth the resource consumption of your operations

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A tendency to put “green” programs and sustainability initiatives on the back burner occurs during difficult economic times, which the California wine industry is currently facing. While this reaction is understandable, it is unfortunate because this is exactly the time to question existing practices and invest in “continuous efficiencies” that will keep paying dividends well into the future. One of the most cost-effective ways to drive continuous efficiency is to invest time leveraging the scattered data on resource consumption that already exists within most winery operations. Let me describe how this works.

UNEARTHING DATA

Probably the biggest untapped resource within any wine company is the vast amounts of valuable data captured and stored away in spreadsheets and databases throughout the company. The current picture of your company’s resource consumption is most likely fragmented at best, with snippets of environmental key performance indicators (EKPIs)—electricity, fuel consumption, water use, solid waste generation, materials recycled and greenhouse gas emissions—scattered throughout the organization. Locating the data and pulling it all together require commitment and time, but the investment will pay dividends once a “context of waste elimination” is developed that can be recognized and understood by everyone in the company. Without this context, keeping employees aligned throughout the implementation and deployment of any continuous efficiency efforts can be frustrating, aggravating and lead to disappointment among the entire staff.

Several wineries have been working on increasing the efficiencies of their operations and have deployed tracking systems for EKPIs. These tracking systems can be as basic as entering the monthly electricity bills into an Excel spreadsheet, to more elaborate and expensive software systems that capture daily use information from wireless data loggers and generate charts and graphs on demand. However data are captured, it often languishes in the desktop computer of the facility manager or director of operations, sealed away from the rest of the company in a digital baggie to grow old and stale.

There’s a reason it’s so important to take time to identify, collect, organize and disseminate existing data before embarking on any quest for efficiencies. The core question you must ask, before embarking on any quest for efficiencies, is: How can you know where you’re going if you don’t know where you are?

PARTNERS IN DATA ACQUISITION

A company’s primary performance metric is the dollar. Because of this, a good place to begin pulling together data on efficient use of resources is in the accounting department. In most cases, employees are only capturing the financial information from billing statements, but these documents usually contain valuable resource information as well. For example, the diesel delivery bill also contains the amount of diesel delivered. By changing the data collection process of the bookkeeper or accountant, minimal time is then required to capture the total gallons of diesel delivered along with the total cost.

Another avenue of data collection to consider is the suppliers themselves. When **Benziger Winery** embarked on a project to inventory its GHG emissions, they didn’t want to dig through all of the paper copies of the diesel bills to manually enter total gallons delivered into the spreadsheet. A quick call to the supplier revealed the winery could get its entire diesel deliveries going back five years emailed in a spreadsheet. The reason the supplier hadn’t provided this information before is because no one had requested it.

Conversations with your suppliers can uncover other hidden benefits as well. **Jordan Winery** experienced an unfortunate loss of propane at a critical time during the holiday season. A call to its propane supplier revealed that the supplier could install a free wireless propane meter that could automatically send a reorder signal when propane dipped below a preset level. A side benefit was that Jordan could also capture the signal to record propane use on a daily basis.

DEFINING THE DATA

The potential for deriving additional value is particularly high in the area of resource use. When asked how much electricity they use, winery people often answer in dollars. While they know only too well the amount of money they spend each month to operate their facilities, few know the total kilowatt hours they consume or have a metric of kWh per gallon/case. Those few who do know the kilowatt hours often are the ones who have already begun the treasure hunt of finding efficiencies in their operations. The unexpected insight from this effort is that this full

picture of resource use doesn’t just provide useful answers; it also encourages the asking of more valuable questions—and that is how efficiencies are found.

This gets into how to best utilize a “context of waste elimination” so that it is both recognizable to everyone within the company and provides access to useful information in real time—and so that it has the highest possible value to the most people. This requires defining the information needed, the frequency that information is needed and the most usable format for the information. Once these factors are identified for the people in the organization, leveraging the most value from existing data will be possible, and the foundation for continuous efficiencies will be in place.

LEVERAGING VALUE

No matter how much is invested in the technological side of continuous efficiency efforts at any winery, no program can really take root and thrive without the understanding and engagement of the people who make up the organization. Without their participation and buy-in, even the most robust commitments can wither and die for lack of understanding and engagement.

Turning data into meaningful information that has maximum value for everyone is an art form. The pie charts and bar graphs used by operations personnel to monitor resource consumption over time may not be the most effective way to motivate employees when simply tacked to break-room bulletin boards, but providing new information in a familiar location can be a good place to start.

That's exactly the strategy employed by **Jeff Zucker**, safety and environmental coordinator for **J. Lohr Vineyards & Wines**. In addition to all of the technological measures Zucker has implemented at the winery, he also has a Water Usage Board in the break room that displays total daily water use on a grid for each day of the month. When the winery stays under the target for the day, Jeff places a message such as "way to go" or "great job!" He even posts the encouragement in different languages because of all the people who come to intern at the facility. "I always have English and Spanish messages, but sometimes I have to use French and even Portuguese as well," he said. This personal touch keeps people paying attention to the Water Usage Board and also the numbers.

The engagement of the J. Lohr employees has contributed to the formation of a four-member water conservation committee, composed of individuals who are interested in saving water. Other employees have contributed by offering useful suggestions for reducing water use throughout the facility. When the technological improvements are coupled with the participation of the employees, the result is an impressive average of 56 percent reduction in water use since the 2003 baseline.

This same idea was germinated at **Sonoma Wine Company** although the delivery method is different. There, the monthly water use information is displayed on a magnetic chart on the side of the most conspicuous tank in a well trafficked area. The chart is broken into 500-gallon gradations with three additional colored magnets to indicate the target for total water use, current use and use the same time last year. Again, the interested employees formed their own water conservation team that the company credits with reducing water use by 30 percent.

GETTING STARTED

To begin, select a year when some part of your operation changed or go back at least three years. Maybe you installed solar panels in 2006 so pick 2005 as your baseline year. The reason for creating a baseline is that it will allow you to track resource use over time and define trends in resource consumption. If your total wine production is trending down while your resource consumption per gallon is trending up,

you know you are heading in the wrong direction.

Regardless of the size of the operation, data on electricity are the easiest from which to start. Many of the larger utilities have online services that record, track and graph electricity use, sometimes on an hourly basis. These services are free and will also provide total electricity use per year. With a simple division of total gallons of wine produced, a useful metric of kWh per gallon can be calculated for your operation. This is important to know because electricity rates have risen an average of 6 percent per year for the last decade. This trend is not expected to change, and with mandatory Time of Use and opt-out-only Peak Day Pricing just around the corner, not knowing how much you use and when you use it could be very costly indeed.

Natural gas and propane are also important metrics to track. If you purchase natural gas from a utility, online services may be available for tracking that resource as well. As mentioned above, propane suppliers can often provide you with detailed use information in addition to billing data if you request it. Many times this will be in a spreadsheet format that can be used with minimal manipulation to provide a metric per gallon of wine produced. While natural gas and propane costs are relatively low right now, they are much more volatile and unpredictable in the market, posing potential risks to the operation of your business.

For many wineries, diesel and gasoline purchases are made on a company credit card. The billing information often includes gallons purchased, or at least the cost per gallon and the total. It might take more effort to capture these metrics, but again, price volatility and future availability necessitate knowing where you are at right now. How would your business be impacted if these fuels were \$5 per gallon next season?

Water is another important metric, but many wineries, especially smaller operations, don't have flow meters on their wells. While this can be a costly investment, the true price of water can be surprisingly expensive. Each gallon requires energy to pump, pretreat, heat, treat and dispose of. Not knowing the amount consumed per gallon of wine produced is a liability, not only in money wasted but also in assuming there will always be a constant supply. Already, vineyards and wineries in sev-

eral regions in California have had wells run dry. With changing weather patterns a certainty in the future, gambling with your water could be gambling with your business.

PUTTING IT INTO PERSPECTIVE

With the information collected and the metrics defined, you will know the resource consumption per gallon of wine but what does that really mean? Is 12 gallons of water per gallon of wine excessive? Is using 11 kWhs-per-gallon-produced above the average industry standard?

The simple answer is that it all depends. It depends on your production process. Does your winery crush, ferment, barrel, bottle and warehouse wine? If you don't crush or bottle, you don't want to compare operations with those that do. It also depends to some extent on your size of operations. If the winery is working with small lots, the winemaker may have to transfer wine and clean tanks and barrels more often. Sometimes there are economies of scale.

This quest for comparable environmental performance metrics is something the wine industry has been seeking for many years, and it is an enormous undertaking. Recently, the **California Sustainable Winegrowing Alliance** received a grant to identify five key metrics and build tools to assist in the development of industry averages. The first tools were already introduced at performance metric workshops in Sonoma County, Lake County, Lodi and the Central Valley.

But while comparing operational efficiencies between wineries can be a catalyst for change, it can also lead to apathy with the operations manager if the results show winery operations to be better than average. Using the analogy of quality, no one wants to produce a wine slightly better than average. The same can be said for the quality of the operations.

The goal is for everyone to know about resource consumption—and then for each person to continuously improve the efficiencies of the operations. Not knowing the resource consumption of your operations in this day and age is like not knowing the varietal of grape going into the press, and that's a risk no winery is willing to take. **WBM**

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