

THE CRAFT PORTAL

CASE STUDY

**USING THE CRAFT PORTAL
TO INCREASE SALES
BY \$827,000**



PROBLEM

Ben operates a US brewery producing more than 75,000 BBLs, with over 80 distributors over a large distribution footprint.

Ben came to GP Analytics after being referred by another brewery. He wanted data to better plan his brewing production, and it was clear to us that we had some problems to solve:



8-15% OUT OF STOCK RATE

Their average out of stock rate was 8-15% on average, even while carrying 35.4 Days of Inventory in the cooler.



Nearly 2 out of every 5 consumers were drinking products older than 79 days

OUR GOALS



Improve distributor ordering to drive fresh beer while keeping OOS minimized



Drive total system DOI down to 50 days (cooler + distributor) in the next 12 months

RESULTS

12 MONTH RESULTS AT A GLANCE



Lowered Out Of Stock (OOS) Rate by 40%



\$827,000 in additional cash*



Days of Inventory (DOI) reduced by -31.61%



Beer is 25 days fresher on the shelf for consumers to buy

**Using the brewery's average revenue per BBL of \$213.90 the improvement of OOS is equal to \$827,000 of cash in the brewery's bank account.*

IF YOU'RE INTO THE DETAILS OF HOW WE ACHIEVED THESE RESULTS TOGETHER, PLEASE KEEP READING. **IF YOU'RE READY TO GET STARTED ON ACHIEVING THESE RESULTS TODAY, LET'S GET YOUR BREWERY ON THE CRAFT PORTAL.**

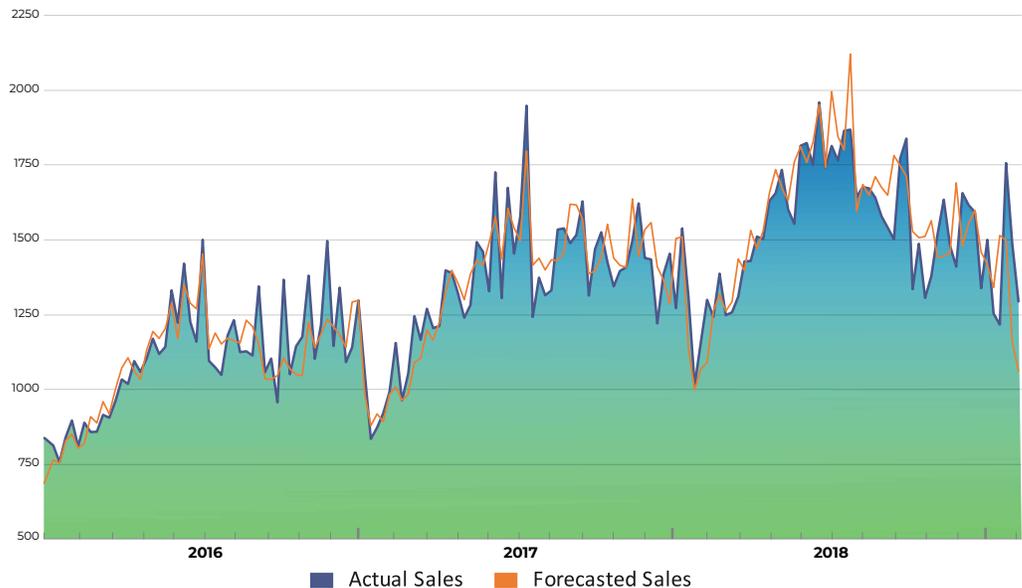
OUR SOLUTION

THE BEGINNING OF A HUGE CHANGE

Out of Stocks (OOS) are the bane of any brewer. Ben had a gut feeling that his distributors were not carrying the right amount of his inventory. But, he didn't have the data to be sure. He couldn't track and measure how much of an impact their inventory levels were having on sales.

Ben came to us looking for a way to apply data to make changes, forecast production, and become more profitable. It's one thing for Ben to manage his inventory at the brewery, but he also wanted a way to manage his distributor's inventory. The Craft Portal was the answer.

Actual Sales vs. Forecasted Sales



BASELINE TEST

We started our data analysis by pulling all depletions to distributors, collecting three years' worth of sales data and distributor inventory.

We then entered that into The Craft Portal's forecasting algorithms down to the SKU/distributor level.

FORECASTING RESULTS

Using our algorithms, we see that we would have achieved an overall forecast accuracy of 93.8% over the last three years. This is a bit lower than our client average but still very good.

In other words, we feel confident that we could have predicted on any given week, +/- 82.5 BBLs of sales on an average of 1,335 BBLs.

To visualize this result and how tight 93.8% actually is, please check out the graph above. The orange line represents what our forecasts would have been and the blue line represents real sales that week.

OUR SOLUTION

HOW WE DO IT

The Craft Portal uses exponential smoothing, trend adjusted, and seasonal profiling to achieve the degree of forecasting accuracy that we do.

$$\hat{a}_t = \alpha_{HW} (x_t / \hat{F}_{t-p}) + (1 - \alpha_{HW}) (\hat{a}_{t-1} + \hat{b}_{t-1})$$

$$\hat{b}_t = \beta_{HW} (\hat{a}_t - \hat{a}_{t-1}) + (1 - \beta_{HW}) \hat{b}_{t-1}$$

$$\hat{F}_t = \gamma_{HW} (x_t / \hat{a}_t) + (1 - \gamma_{HW}) \hat{F}_{t-p}$$

The key is that our system dynamically adjusts (re-optimizes) as new data comes in each week so that our forecasting is a dynamic function all the way down to the distributor/SKU level.

WHY YOUR DISTRIBUTORS' INVENTORY MATTERS

This chart shows a week of data from various Craft Portal Brewers that had all been on the system for a year or more. The average % out-of-stock across our brewery clients' distributor network is only 3.6%.

Craft Portal cares so much about your OOS rate because it is a direct impact on your brewery's bottom line revenue. For example, if a tap handle or point of distribution can't be fulfilled by the distributor, what are the odds that the retailer or consumer will swap for another product and never come back to your brewery?

CRAFT PORTAL CLIENT STATUS METRICS CURRENT WEEK

System DOI Status

	Client 1	Client 2	Client 3	Client 4	Client 5	Client 6	Client 7	Client 8	Client 9	Client 10
Status	Live									
System DOI (Total)	51.8	51.8	38.2	58.6	50.0	35.4	197.0	44.0	41.9	67.5
Wholesaler DOI	30.3	34.7	36.3	—	27.2	22.2	—	—	37.2	54.9
DC DOI	3.4	1.3	—	—	4.0	1.1	—	—	—	10.5
Cooler DOI	18.1	15.9	1.9	4.2	21.8	11.8	143.0	—	4.7	2.0

Out-of-Stock Metrics

	Client 1	Client 2	Client 3	Client 4	Client 5	Client 6	Client 7	Client 8	Client 9	Client 10
WDP %	4.4%	9.0%	2.6%	7.5%	6.2%	4.5%	3.7%	6.9%	5.8%	2.6%

Out-of-Stock Metrics Adj (If no Rec Order Adjustment were Made)

	Client 1	Client 2	Client 3	Client 4	Client 5	Client 6	Client 7	Client 8	Client 9	Client 10
WDP %	6.3%	5.6%	2.3%	2.4%	5.1%	5.1%	3.8%	7.1%	4.3%	2.0%

Wholesaler Recommend Order Acceptance % (Measure of Deviation from Original Recommended)

	Client 1	Client 2	Client 3	Client 4	Client 5	Client 6	Client 7	Client 8	Client 9	Client 10
% Acceptance or Increase	76.1%	44.7%	49.2%	44.8%	51.5%	62.5%	13.4%	55.5%	15.9%	64.8%

Wholesaler Craft Portal Engagement

	Client 1	Client 2	Client 3	Client 4	Client 5	Client 6	Client 7	Client 8	Client 9	Client 10
Weighted Whole-Saler Engagement	71.7%	86.4%	95.3%	24.1%	89.6%	92.4%	75.4%	81.6%	100.0%	54.4%

WDP% = Out of stock %

WDP (if not adj) = Out of stock % had the wholesaler just taken The Craft Portal Recommended orders with no adjustments ie if the system 100% was running auto-pilot

OUR SOLUTION

OUT-OF-STOCKS IMPACT

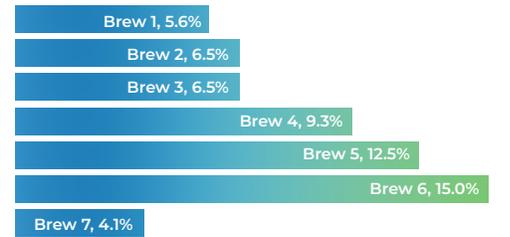
When we first started looking through OOS data for Ben's brewery's core year-round brands, we found an out-of-stock percentage at wholesale of 8.5%. Although this is much better than typical pre-Craft Portal clients (16% to 18%), there is a massive opportunity to close this gap.

Compare Ben's brewery to The Craft Portal OOS benchmark of 3.6%. There is an opportunity gap that we can close. Using an average revenue per BBL of \$213.90, the brewery is missing out on \$676,000 per year in revenue.

Core Year-Round Brands Back Test

Current Week	
Week Forecasted Sales (BBLs)	1,233
Projected Out-of-Stocks (BBLs)	105
Ben's Brewery Out-of-Stock Percentage	8.5%
Craft Portal OOS Benchmark	3.6%
Revenue per BBL	\$ 213.90
Projected Opportunity per Year in Dollars	\$ 213.90

Out-Of-Stock % by Brand



HOW WE CALCULATE AND FIND OOS OPPORTUNITIES

We can take our accurate forecasting down to the individual distributor and SKU level, which allows us to see where in your distributor network there is demand but no inventory available.

We look at the on-hand inventory of a distributor vs the forecast for that distributor and calculate the missed sales in both units and BBLs. We then take the missed opportunity in BBLs and divide that into the total forecast (i.e. the sales opportunity for the week) to calculate what we lost in sales as a percentage of the opportunity.

Doing this gives you the running visual of what OOS is in the current week and what they could be in future weeks.

WHAT ABOUT OLD BEER?

At this point, Ben understood that there was an opportunity to drive OOS lower, but in the past, he had always been concerned that lower OOS will lead to higher DOI in his brewery storage and his distributor's warehouses.

He knows it's the kiss of death to send out beer from his brewery that is already close-dated, and he takes great care in being able to brew the highest quality beer. The last thing Ben wants to do is have it age in a warehouse waiting for a consumer to pick it up.

OUR SOLUTION

DAYS OF INVENTORY BASELINE

Though the data looked decent from an inventory coverage perspective (i.e. OOS are low compared to most pre-Craft Portal clients), over-stocks are a bigger issue than we normally see.

The Craft Portal looks at three different inventory measurements:

- **Brewery cooler DOI**—the inventory in sellable stock at your brewery
- **Distribution DOI**—the inventory at your distributors ready for sale
- **Total system DOI**—the total inventory combined with your breweries stock and your distributors stock.

Using the original data, Ben's brewery cooler had 35.4 DOI in the cooler. At face value that's not a horrible supply, but Ben is not in love with the idea that beer is more than a month old before he ships to his distributors. He knows this can lead to older beer in the hands of consumers.

We also looked at Ben's distribution DOI. **Top Craft Portal clients typically have an average distributor DOI of 30 days or less.** Ben's was significantly longer at 44 days in-distributors. The goal was to improve distributor ordering to drive fresh beer while keeping our OOS minimized to the Craft Portal Benchmark.

Given this data, we can say with 93.8% confidence that 39.2% of the product currently in the network would go to retail with 79+ days on it. In other words, nearly 2 out of every 5 consumers were drinking products older than 79 days (Ben's total system DOI). This is a metric we track closely for other Craft Portal clients as IPA's shed quality quickly, and it can diminish the odds of consumer re-buy if the product isn't as fresh as possible.

Now, armed with this new way of looking at Ben's full inventory from brewery to consumer, **Ben set a goal of driving total system DOI down to 50 days (cooler + wholesalers) in the next 12 months.**



Nearly 2 out of every 5 consumers were drinking products older than 79 days



Drive total system DOI down to 50 days (cooler + wholesaler)

HOW DID BEN DO?

12 MONTHS REVIEW

OUT-OF-STOCK

12 months after going live with the Craft Portal, let's look at Ben's brewery's results. Projected OOS held this week at 2.7% of total sales, a total of only 42 BBLs.

The starting OOS rate was 8.5%, so this represents an OOS improvement of 5.8 percentage points. Using the brewery's average revenue per BBL of \$213.90, **a 5.8 percentage point improvement of OOS is equal to \$827,000 in increased revenue for Ben's Brewery annually.**

The great thing about this OOS improvement is it keeps paying over and over again, bringing in more cash every single week. We even forecast out of stocks for each week into the future.

Core Year-Round Brands Current

	Current Week	Week 2	Week 3
Week Forecasted Sales (BBLs)	1,559	1,528	1,580
Projected Out-of-Stocks (BBLs)	42	76	82
Ben's Brewery Out-of-Stock Percentage	2.7%	4.9%	5.0%
Craft Portal OOS Benchmark	3.6%	3.6%	3.6%
Revenue per BBL	\$ 213.90	\$213.90	\$213.90
Projected Gain/(Loss) vs Benchmark per Year in Dollars	\$ 152,254	(\$218,330)	(\$219,855)

You can also see that tracking OOS into future weeks allows Ben's team to review, take action, and manage their inventory in their distributors' warehouses. This is what actively managing your distributor's inventory looks like.

A best practice on managing OOS is working with your operations team to tie at-risk compensation to keeping OOS low by setting goals and tracking vs those goals.

OLD BEER RESULTS

It's a misconception that the fix to out of stocks is to just make distributors carry more beer. Ben knows that tactic comes at the downside of having aged beer in consumers' hands.

12 months in, we know his brewery is doing well with OOS, but at what cost?

Remember the goal was to not let his team just cover up OOS with higher DOI. We want to see how the team did meeting their goal of 50 DOI.

Days of Inventory

	Baseline	Review
Ben's Brewery DOI	35.4	25.2
Distributor DOI	44.0	29.1
Total System DOI	79.4	54.3
Improvement		-31.61%
Ben's Total System Goal		50

Over the last year, Ben's team has lowered the total system (brewery & distributor) DOI by -31.61%. This is an astounding improvement.

HOW DID BEN DO?

12 MONTHS REVIEW

OLD BEER RESULTS (CONT'D)

Operationally, the brewery made a large headway in lowering their inventory in the brewery to start, cutting 10 days off their DOI. With the Craft Portal data, Ben's team learned they don't need to carry as much safety stock on hand because they have a better vision of what they are shipping over the next 2 to 3 weeks, plus they have a very accurate forecast going out another 10 weeks.

This has allowed Ben's team to brew and package with more confidence, following the Craft Portal forecasts.

The benefits of the DOI improvement go beyond fresher beer. The brewing team keeps a similar schedule, uses the same equipment, keeps the same space, and they are doing it all more efficiently. Now Ben is able to expand his sales footprint without needing to invest in more equipment and warehousing. And, his brewers can commit more brewing time to the innovation brews they've been dying to bring to market and haven't ever found the time or space.

As a capital intensive business, getting the best ROI on space and equipment is important.

Distributor DOI has seen a huge improvement as well. Ben's team got the right beer to the right place at the right time more often than before. This has a lot of positive effects:

- Better forecasting allows for less safety stock needs
- Lower distributor DOI = happier distributor partners
- Less OD co-op expense exposure from your distributors
- Better armed to adapt to price changes with lower DOI at distributors
- Fresher beer on the shelf for consumers

A huge win for Ben's inventory team is being able to work with their distributors and show them the positive DOI changes they have made. Distributors will be more likely to accept their recommendations for orders, moving toward more of a brewery-managed inventory system (VMI).

WHAT IS THE RIGHT DOI?

We often get asked the question: What is the right DOI? Well, that depends on the brewery and on the brewery's network. For Ben's brewery, the sweet spot is 50 to 55 days. 50% of Ben's sales come from out of his home market and state. His team is managing a growing distributor list of 80+ and the DOI for each distributor needs to be different.

As an example, Ben's home market distributor takes orders weekly. They are the highest volume distributor, so they can keep a much shorter DOI as they are ordering and taking deliveries weekly.

On the flip side, his distribution network one state away is a collection of medium and small distributors. They are ordering every 4 to 6 weeks. This means that they need to carry a higher DOI to keep OOS in range and make shipping efficient.

You can't cut every OOS and DOI decision with the same set of rules. Ben's results show that you can use data to make the best decisions for each SKU and each distributor.

HOW DID BEN DO?

12 MONTHS REVIEW

TAKEAWAYS

What we learned by working with Ben is that his intuition was right—his distributors were not carrying the right amount of his inventory, and they didn't have the data to improve it. Out of stocks at distributors never costs distributors as much as they do for you the brewer. Distributors are not out of all the beer they sell, only yours, and they will sell someone else's beer if they don't have yours.

Now, Ben and his team can track and measure OOS & DOI performance so they can plan, manage, and engage along with their distributors to make the best data-driven decisions.

