Hitting the Mark:

Accuracy in Beer Sales Forecasting

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Executive Summary

Throughout the beer industry there is great potential for both distributors and suppliers to capitalize on efficiency gains and cost savings through an increased focus on beer sales forecasting. By increasing collaboration between distributors and suppliers, establishing best practices, and dedicating the appropriate systems and personnel to the forecasting process, both sides stand to benefit immensely.

The distributor job of accurately forecasting sales is an ever increasing challenge, with rapid growth in total Stock Keeping Units (SKUs) and product demand being constantly influenced by a broad spectrum of variables including: weather, the economy, seasonal changes, holidays, display and promotional activity. By streamlining the forecasting and ordering processes we can increase the accuracy of demand planning on a consistent basis. Achieving this will optimize inventory and improve service levels and bring dollars directly to the bottom-line by improving cash flow, sales volume and company profitability – clearly making this a high priority across our industry.

While technology advancements and forecast accuracy have advanced hand-in-hand, many distributors still maintain a strong dependence on knowledge-based employees, spreadsheets and other tools that are not connected with legacy systems that contain the sales data. These current practices create substantial variation in the systems, processes used, and ultimately form the outcome of the forecast.

Achieving higher forecast accuracy improves the supplier's ability to respond to a distributor's true need for product during peak seasons, and translates to manufacturing and transporting beer at the most efficient levels. The benefits of running a highly efficient forecasting and ordering model at the distributor level are many, including:

- *Minimizes Out of Stocks:* Out of stocks equal lost sales, which will never be recovered. Not having inventory can create delivery and service disruptions as customers expect placed orders to be filled. Out of stocks due to poor forecasting and ordering can negatively impact brand equity, customer rapport and ultimately sales and profitability. The consistent use of a sales forecasting model can help eliminate out of stocks.

- *Improve product freshness and warehouse efficiency:* Too much inventory can result in out of code beer that must be destroyed or close to code beer that must be liquidated at or below cost. It also is a cash flow drain and impedes proper investment to grow the business. Close to code product creates customer service disruptions, as salesmen have to focus on moving close coded product around as opposed to selling and merchandising fresh product and gaining new placements.

- *Maximizes Warehouse Space Utilization:* As distributor consolidation and SKU proliferation continues, warehouse space is at a premium. Making the best use of a sales forecasting tool can help a distributor maximize the use of existing space and reduce the possible need for a costly expansion.

- *Provides Cash Flow Efficiencies:* Most distributors' largest ongoing cash flow use is funding inventory. Whether a distributor finances their inventory through a third party or pays for it from internal working capital, there is a cost for the use of those funds while the inventory is in the warehouse waiting to be sold. The effective use of sales forecasting can help a distributor maintain optimum inventory levels, thereby maximizing cash flow.

- *Capitalize on peak sales weeks:* These special weeks add up over the course of the year and provide a premium on gross margin. Inaccurate forecasting jeopardizes a large percentage of these sales periods for any given year. Because there is only a small window of opportunity to maximize these key weeks, accurate forecasting ensures that the distributor has the proper product mix on hand to take full advantage of their operational capacity.

By increasing collaboration between distributors and suppliers, establishing best practices, and dedicating the appropriate systems and personnel to the forecasting process, both sides stand to benefit immensely.

A majority of distributors do not have a comprehensive forecasting and ordering system and instead use some kind of informal or hybrid system based on specific supplier requirements. Some systems are manual, some are automated, some a combination. With all the data available today from route accounting software, supplier software systems and internal historical sales, there is a robust foundation for the distributor to draw upon and share with the Forecast Analyst to create a more accurate order.

Suppliers need distributors to be more accurate in forecasting beer sales as it helps to streamline their production costs.

Suppliers need distributors to be more accurate in forecasting beer sales as it helps to streamline their production costs. During peak seasons, all suppliers cannot meet the demand for their distributors when some are intentionally overestimating what they will need on a weekly/monthly basis to compensate for poor planning.

If distributors spent more time analyzing the demand in their market, suppliers could focus on manufacturing and transporting beer at the most efficient levels. The supplier would not endure broad production planning and brewery capacity swings due to ineffective distributor forecasts. If all distributors worked collaboratively with the supplier in regards to forecasting, this would result in cost savings across the distributor and supplier network.

The best practices and case study included in this paper will identify key processes and variables used to accurately predict demand and will illustrate how distributors have successfully worked in partnership with suppliers to put forecasting and ordering best practices in place.

Overview of the Beer Industry: History and Where We are Today

When 90% of a supplier and distributor's sales were represented by one or two brands and a handful of SKUs, there was not much need for formal forecasting. Breweries were built to accommodate long production runs and distributor's warehouses had high deep pallets of these few SKUs.

Forecasting and ordering of beer has appropriately improved over the years as technology has advanced. Forecasts used to be hand-written in the past by an individual who had extensive knowledge of the business and their brands. Given changes in trends on a daily, weekly and monthly basis, manual forecasts and order updates were very laborious.

In 1995, the average beer distributor carried 190 SKUs[1]. By 2006, that number nearly doubled to an average of 351 SKUs[2]. A manual model of forecasting with infrequent updates can no longer be effective today given the increasing number of SKUs involved.

In 1995, the average beer distributor carried 190 SKUs. By 2006, that number nearly doubled to an average of 351 SKUs.

While forecasts may not be hand-written today, there is still a heavy dependence on knowledge-based employees and the utilization of spreadsheets that are not connected with legacy systems. Distributors and suppliers need to leverage their historical data and improve their software and database capabilities to aid them in devising efficient, accurate forecasts to enable all parties to make more informed decisions.

The frequency and mechanism in which historical sales and inventory data is provided to a supplier plays an instrumental role in the forecast efficiency and effectiveness. The goal is to receive automated real-time sales and inventory data so that forecast and order updates can be made more frequently. If forecasting software is in place but historical sales only update weekly or monthly, forecasting models and algorithms can only recalculate forecast data for that time period.

Regardless of the brands a distributor carries or the amount of SKUs in their portfolio, everyone's goal today, and in the future, should be to streamline forecasting and ordering processes to optimize inventory and improve service levels. These practices will allow the industry to provide fresh beer at the right time, to the right people, at the right price. Achieving these goals will bring dollars to the bottom line by improving cash flow, sales volume and company profitability.

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[1] *National Beer Wholesalers Association Distributor Productivity Report – 1996.*

[2] *National Beer Wholesalers Association Distributor Productivity Report – 2007.*

Forecast & Ordering Overview: Challenges and Opportunities

It is much easier for a supplier to generate an accurate forecast of their product for a region involving many distributors than it is for any individual distributor within that region to accurately forecast for only their own needs.

The Forecast Analyst: Distributor Day-to-Day Operational Planning vs. Sales Planning

The responsibility of forecasting and ordering product at the distributorship should lie with a Forecast Analyst. Most distributors may already have a "Forecast Analyst", although they may not be referred to as such. In a large or complex organization, these duties may be part of the full time purchasing manager's position. In a smaller organization, the Forecast Analyst may be an owner or operations manager and their forecasting and ordering duties may be in addition to other responsibilities. Whoever this person is, they should have the following qualities and qualifications.

The Forecast Analyst should be a detail-oriented person who can enjoy the sometimes mundane, albeit important, task of forecasting sales and ordering inventory on a weekly or monthly basis. Although this is mostly an analytical job, the Forecast Analyst must also have good judgment skills and intuition to be able to understand and integrate the difficult to measure inputs of accurate forecasts and ordering.

The Forecast Analyst position should be a position independent of the sales team. He or she should be knowledgeable about company promotions, trends and historical sales. He or she should also have timely and constant communication with sales management and other key decision makers. The Forecast Analyst should work with all departments, including operations to ensure inventory levels stay lean and profitable.

The Forecast Analyst's motivation and incentive should be the timely and accurate forecasting and ordering of product to achieve optimum distributor inventory levels. They should not be influenced by nor perform their job duties based on non fact-based criteria or unsupported requests from other departments.

The Forecast Analyst's job is influenced by the company's overall annual sales and business planning and the use of sales plans should be the basis by which the Forecast Analyst begins his or her duties. As executive management and sales managers plan and revise sales numbers periodically throughout the year, the Forecast Analyst should work with them to get the best information possible with which to form the basis for weekly forecasts and orders. From that point however, the Forecast Analyst's work should be independent of the long-term sales planning process.

It is critical for forecasts to be reasonable because of the lead times involved and the ordering process in the beer industry. All suppliers are different with their method of ordering product and time to ship.

Variances Between Distributor & Supplier Forecast Methods

It is much easier for a supplier to generate an accurate forecast of their product for a region involving many distributors than it is for any individual distributor within that region to accurately forecast for only their own needs. Take the San Francisco Bay Area as an example. It has over seven million people and weather could adversely affect one distributor over another for any given weekend of the year.

If the temperature in the Silicon Valley is in the low 90s on a Saturday in June, tens of thousands of residents would most likely choose to visit the Monterey Peninsula for a day at the beach where the temperature is consistently 15-20 degrees cooler and more comfortable than San Jose. On the other hand, if San Jose is going to be in the high 70s/low 80s on that same Saturday, the majority of those beach goers would to prefer to stay closer to home and barbeque as opposed to having a chilly beach experience.

The change in weather could create a variance of close to 20% of sales on that Saturday in June. Regardless of where they go, those consumers are going to enjoy a sunny California day drinking their beer of choice, but the question remains where? With only 12 miles separating the beach and the Silicon Valley, this variance risk puts a great level opportunity lost for one of the two neighboring distributors.

Suppliers do not face this weekly challenge regionally, as their sales will remain constant overall. They have a better idea of aggregate sales per region based on promotions and overall sales history.

Supplier vs. Distributor: Goals & Needs

Beer suppliers rely on their distributors to provide accurate forecasts for their respective markets in order to plan their production and manage their inventory, and in some cases distributor inventory. The cost impact to suppliers can be great if forecasts are missed by a large variance or if they are consistently off their target.

Importers are looking at a further time horizon than domestic suppliers because of the transit times.

I. Methodology

From a supplier's perspective, distributors can do a better job of forecasting if they incorporate some of the following procedures:

1. *Prepare forecasts for the same period increments (weeks, months) and for the same lead times (8 weeks out, 4 months out, etc) as their suppliers do.* Suppliers request different time horizons. Importers are looking at a further time horizon than domestic suppliers because of the transit times. Some suppliers ask for monthly forecasts while others ask for weekly forecasts. It is critical that distributors prepare their forecasts for their suppliers for the same frequency and time horizons each time.

2. *Distributors should not over forecast just to make sure they have enough inventory.* Some distributors want to play it safe and forecast higher than they realistically think, in order to secure enough product to cover them if their sales increase more than anticipated. This alleviates the distributor from having to add orders off cycle. The downside of this to suppliers is that if the distributor's sales do not increase above the realistic rate, the distributor will most likely cut future orders. In some cases, the production has already been scheduled and the supplier then incurs the added costs of holding that inventory in its warehouses.

3. *Distributors that are good forecasters miss on both sides, sometimes too high and sometimes too low.* A good distributor tracks its forecasting accuracy and strives to become increasingly more efficient during each cycle. Suppliers also track forecasting accuracy of their distributors' forecast and work with them to analyze where they missed in order to guide them to become more accurate in the future. Some suppliers offer training on forecasting to help distributors become better forecasters, which inevitably helps the supplier in the long term.

4. *Suppliers want distributors' forecasts to be truly unconstrained, meaning they are not thinking about how it will impact their order / inventory levels.* Forecasts should really focus on future demand and not on maintaining minimum inventory levels to keep costs down. Distributor forecasts for some domestic suppliers determine the orders for each distributor. The distributor's focus should be more on the forecast of depletions versus maintaining certain levels of inventory days on hand. It is appropriate, if not necessary, to occasionally adjust certain product-specific Days of Inventory (DOI) based on current trends outside of the supplier's recommended target.

5. *The number of sell days is an important factor to consider if doing monthly forecasts or even weekly ones when holidays shift to weekends from weekdays or vice versa.* It is necessary to know how one less sell day for a given period can have a significant impact on sales.

II. Recommended Approach

There are many input considerations that go into a good forecast. A distributor that forecasts accurately on a consistent basis usually takes into account several factors, including these listed below:

1. *Promotion schedules.* It is important to look at upcoming promotion schedules and compare them to last year's. Not only should they be looking at price promotion schedules for the brands and packages they are forecasting, but also any competitive brands that they carry that could impact the forecasted package's sales.

2. *Price changes are important to consider given that many distributors and retailers will purchase an*

above average amount of product in advance of a scheduled price increase. Additionally, a distributor must consider known price increases of any competitive products they carry that could impact the forecasted package. Awareness of competitive products by another distributor in the same market should also be considered as to how it may impact sales. When retailers become aware of price increases they tend to order more than normal and that in turn leads to limited space in their coolers and storage for other products.

3. *Seasonality is always an important* consideration particularly in areas of the country where the seasonal changes are great, i.e., the northern states.

4. *Holidays are also critical to factor into the forecast.* Reviewing the holiday's impact to baseline sales historically can help predict the future impact on sales. It is important to note anomalies from prior holidays such as poor weather and economic conditions that could have impacted sales historically.

5. *Weather is a factor to consider mostly as it pertains to history and abnormal conditions that could have impacted the period sales one way or the other.* Abnormal rainfall, flooding, ice storms, heat waves in the fall and winter are all weather conditions that directly impact sales for a given period. These should be noted somewhere so that the Forecast Analyst can reference these factors that caused unexpected sales gains or losses with future orders.

6. *Historical events that impacted sales significantly are important to consider. It is important to recognize events that caused sales to be unusually high or low for a given period.* Supplier incentive programs, distributor incentive programs, special events, local sports team participating in a playoff or a championship game or a large music concert that was sponsored by the product you are forecasting for are all examples of events that can impact sales results versus baseline. As a best practice, the Forecast Analyst should make notes on conditions that positively or negatively impacted sales for a prior period. This will allow the Forecast Analyst to review those events when he or she is preparing their forecast for the same period next year. Market conditions such as a struggling economy or any major outside factors that can influence consumer purchase ability should also be considered.

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7. *One of the best practices a distributor can do is to get input from sales management or have a consensus meeting with a team of sales people.* This is usually done after completing the forecast with all of the considerations mentioned above and reviewing it with the sales team or sales manager. The sales manager can provide input that a Forecast Analyst may not be aware of such as upcoming special events, recent competitive pricing and promotional activity, retailer closings and openings, and other external conditions not readily apparent to the individual doing the forecast.

8. *One of the most important things a distributor can do is to have a dedicated person responsible for forecasting each month known as a Forecast Analyst. I*deally, this person has experience in sales and is very analytical. This person should be involved in sales meetings, be knowledgeable about promotions schedules and changes and be aware of all chain programming. A good forecast could take anywhere from two to four hours of uninterrupted time per supplier. If allowable by the supplier, the Forecast Analyst will adjust forecasts during mid period based on information he or she obtains from his or her sales sources. Lastly, it is beneficial to have a trained backup person to prepare the forecast if the primary person responsible is sick, on vacation or terminated.

9. *A good practice for distributors is to track their own forecast accuracy and review these metrics over time to identify the SKUs that are consistently over or under forecasted.* The distributor Forecast Analyst should identify the performance gaps and work with sales to better understand the gaps and how they can learn from poor accuracy results for future forecasts. A good way to approach this is to apply an A,B,C classification for all SKUs based on volume.

III. Cost Implications

There are costs implications for suppliers when forecasts are off by a wide variance. These costs are borne by the supplier, reducing their profits, which in turn, reduce the dollars available to spend in the marketplace which benefits the distributor.

Forecasting too low results in underproduction, and if sales do better than forecasted, will require the distributor to order more product. If more product is not available at the supplier's warehouse, the supplier has to run additional production that was not scheduled. Unscheduled production runs are costly for the supplier, as it takes time to convert production lines for different packages. Additional labor and/or overtime may be used as well which adds to the cost of supplier production.

Forecasting too high could result in distributors cancelling orders, which means the supplier has to warehouse the product, driving up transportation and warehousing costs.

Other costs that the supplier bears is the time and labor for supply chain customer service reps that are adjusting and changing orders.

IV. Supplier Differences

Suppliers each have their own forecasting system and process, and they differ in many ways. Domestic suppliers differ from import suppliers. Large suppliers differ from small suppliers. Some suppliers use online systems for input and analysis, while others use basic spreadsheets for submission.

Large domestic suppliers have built systems that are tied into their distributor's orders. The distributor's forecast determines the distributor's order based on measures that are calculated to maintain a minimum level of days on hand for each of their SKUs.

Some suppliers get forecasts from their entire distributor network, while others get a sample of distributors that contribute a majority of their volume and represent different geographies.

Forecasting time horizons are typically much longer for importers, as distance and servicing local markets need to be factored into scheduling changes. Domestic suppliers' production facilities are closer to distributor markets and are owned by the domestic supplier. Import suppliers' production facilities are obviously further away and may not be owned by the supplier. Ownership means greater control and flexibility of production changes.

Each distributor's needs are different based off of SKU quantity, geographical area, number of suppliers, warehouse constraints, and software/technology capabilities.

V. Distributor Differences

Each distributor's needs are different based off of SKU quantity, geographical area, number of suppliers, warehouse constraints, and software/technology capabilities. Even though every distributor is unique, most do not have a dedicated Forecast Analyst to handle this process, while a few larger distributors have more than one person assigned to specific suppliers.

Regardless of the distributorship, the Forecast Analyst or purchaser needs to consider the following information to make his or her purchase determination:

1. Three years or greater of previous sales history and six months of projected sales activity into the future

2. Two years of trend information, on and off premise promotions, discount amount, seasonal information, previous weather conditions, and this year's selling days

3. The minimum DOI required, based on the supplier's lead time

4. Producing a weekly or monthly forecast in order to meet the supplier's requirements

5. The ability to view multiple warehouses together in aggregate and then separate them to group products together [if applicable]

VI. Weekly vs. Monthly

Few suppliers currently require weekly forecasts and sales analysis from their distributors. To achieve optimal accuracy, there needs to be more emphasis put on real-time data while making smart, informative forecasting decisions based on daily and ultimately weekly results.

Currently most suppliers' backend systems roll up sales data into monthly totals as opposed to weekly. The larger the aggregate number is, the more likely that the forecast period will be more accurate.

Until more suppliers implement weekly analysis reports, distributors are not compelled to follow this recommended course of action. This concept should be explored by suppliers when they look at upgrading their backend and operational systems moving forward.

To achieve optimal accuracy, there needs to be more emphasis put on real-time data while making smart, informative forecasting decisions based on daily and ultimately weekly results.

VII. Better Tools

Suppliers can help distributors in the future by offering ordering tools that allow the distributor to automatically upload the order to the supplier's system to avoid unnecessary data entry. This could be in whatever format the supplier requires in their specifications. The goal here is to allow the distributor to push data to the supplier. Currently, suppliers either have distributors email spreadsheet-specific orders or host a website where the distributor must manually key in quantities per product per order.

Ideally, a distributor would have a highly effective forecasting and ordering system in-house where it can create weekly forecasts across all suppliers and generate supplier-specific orders based on each supplier's unique requirements for pallet size, truck weight minimums/maximums, warehouse ordering distribution centers, etc. The manual entry process would be removed, with the only human interaction involved occurring before the order is uploaded, during the forecasting session at the distributor level.

When the Forecast Analyst is ready to upload the order, there will be a validation check by the supplier within their back-end system to ensure that the distributor meets the supplier's specifications and that the order was correctly created. Only after this validation will the order be allowed to process.

Suppliers should consider this method when considering future system development builds, as distributors will become more sophisticated over time through competition, continued consolidation, and advancements in technology.

Best Practices

The most important aspect of developing a forecasting and ordering tool at a distributorship is the ease of use for the Forecast Analyst. If the system is too cumbersome, hard to understand, over analytical or time consuming, it defeats its purpose. This tool must be user friendly and easy-to-adopt, as the distributor should not be at the will of a specific individual because of his or her years of forecasting that only he or she has. Although human experience is extremely valuable for any company, it is just as important for distributors to develop an extensive analytical forecasting tool to improve ordering and to keep inventory levels lean.

The next point regarding forecasting and ordering is that no matter how sophisticated and advanced a system is, it will always require human intervention. Many advanced forecasting programs on the market today outside the beer industry utilize Regression Analysis or Exponential Smoothing. While these calculations may be helpful in determining specific market segments when considering future sales, this is not necessary with the current supplier/distributor relationship. There is only so much that can be automated and derived with data parameters and variables when writing software. Ultimately, it is more valuable to have a human being review all the possible data presented to him or her and make an educated guess as to how much product to order for that given week. This is a key point because of the nature of the weekly ordering process some suppliers now require of their distributors. An automated system does not contain common sense that a person has when making the final decision regarding quantities of product ordered.

Forecasts are just that, forecasts, and will never be 100% accurate because nobody can predict the future no matter what industry or medium it is.

I. Evaluating your Forecast Performance

Forecasts are just that, forecasts, and will never be 100% accurate because nobody can predict the future no matter what industry or medium it is. Too many times 100% perfection is related to forecasting or predicting things in our society. The focus here should be on measuring forecast accuracy on a weekly, monthly, quarterly, etc. basis. This could include standard deviation numbers, supplier specific variances, new product growth, and promotion driven products.

Forecast accuracy results should be reviewed periodically by the Forecast Analyst's manager with incentives rewarded appropriately. There is always room for improvement regarding ordering accuracy. As long as the Forecast Analyst is aware of his or her weakness, whether it is a specific supplier or package group for example, efficiencies can be made.

Another element of accurate forecasting is how much bias the Forecast Analyst applies to all products. The example below highlights the difference between averaging accuracy over a five-week period, compared with the total sum of forecasting errors.

Forecast Accuracy Example	WK 1	WK 2	WK 3	WK 4	WK 5
12 oz. Lager Cans					
Forecast Number	115	150	210	450	400
Actual Sales	110	170	200	465	380
Standard Deviation	[5]	[20]	[10]	[15]	[20]
Actual Error	+5	-20	+10	-15	+20
Running Total of Forecast Error	+5	-15	-5	-20	0
22 oz. Stout					
Forecast Number	170	180	213	420	350
Actual Sales	165	175	210	403	353
Standard Deviation	[5]	[5]	[3]	[17]	[3]
Actual Error	+5	+5	+3	+17	+3
Running Total of Forecast Error	+5	+10	+13	+30	+33

Lager - Average Forecast Rating: 14 Total Forecast Error: 0
Stout - Average Forecast Rating: 6.6 Total Forecast Error: +33

Note: Average Forecasting Rating = SUM (Actual Error) / # of Weeks (5)
Total Forecast Error = Running SUM of Actual Error per Week

Although the Forecast Analyst averages a 6.6 rating for the Stout, the analyst is much more accurate during the overall period with the Lager. By always over-estimating the Stout sales, the analyst will never achieve a higher level of efficiency both at the distributorship and with the supplier. The distributor will always have excess inventory for the Stout each week (above the required DOI), while the supplier is constantly shipping unnecessary and costly product.

II. Proven Methods

The following data points need to be considered for each product in real-time when developing a forecasting and ordering system:

- Beginning of Week Inventory
-Week-to-Date Sales
-Current DOI
-On-Floor Inventory
-Current Committed Sales (but not yet invoiced)
-Current Week Forecast
-Available Units to Sell
-Lead Time

Weather is important but should not have too much weight when forecasting future sales.

It is also extremely important to incorporate each product's DOI requirement per supplier by week, because it could be different during each season. Having the flexibility to change the DOI for each product by specific weeks is necessary in evaluating all the criteria above.

It is worth noting that with many distributors carrying well over 500 SKUs, it is highly inefficient to store all these data points in a spreadsheet format. A Relational Database Management System (RDBMS) is the more viable option to obtain all the variables involved in this process.

III. Forecasting vs. Historical Analysis

Current information is always more valuable than historical data because things change so quickly in the beer industry depending on the SKU and its competition. While it is important to reference sales trends per week over multiple year periods, it should not be used as a crutch when trying to forecast for any given week of the specific year you are in currently.

Weather is important but should not have too much weight when forecasting future sales because most suppliers require at least a one week lead-time. It can be used as an effective analytical tool for reviewing past sales history.

Retail advertisements are another effective analytical tool. Most retailers tend to run their ads with less than a week's notice for their distributor. This takes control away from the Forecast Analyst by putting supply levels at risk for that week with a specific SKU. These ads can provide very useful data when reviewing a rolling sales average and trying to determine why the Forecast Analyst may have under forecasted for any given week.

One more variable to focus heavily on is when forecast numbers were extremely inaccurate in previous years, is whether the supplier changed, froze or cancelled the order outright. There are certain events that are out of a supplier's control, but the distributor or Forecast Analyst should not be penalized for a low accuracy rating if this is the case. Suppliers need to build this exception into any ranking system they currently use or will develop in the future.

IV. Effective Communication

Although every supplier is different when it comes to their various ordering processes, they all require the same essential information from the distributor – how many pallets per product. Bigger suppliers tend to require all single cases per pallet whereas medium to smaller suppliers offer mixed pallets per shipment.

The inefficiencies the distributor is currently facing in this weekly-to-longer ordering frequency is having to devote unnecessary hours on websites and filling out custom forms to place their orders. If the supplier could take the lead in creating an electronic document format (EDI, website order uploads, email text attachments, etc.), the distributor could compile the order with his or her forecasting software, using the supplier specs, and transmit it effortlessly after spending the majority of his or time analyzing that time period's order on their distributor's internal network and database system.

Ideally, the majority of the time at the distributor level should be to review their current sales and inventory conditions and make their best educated guess before sending their orders to the supplier.

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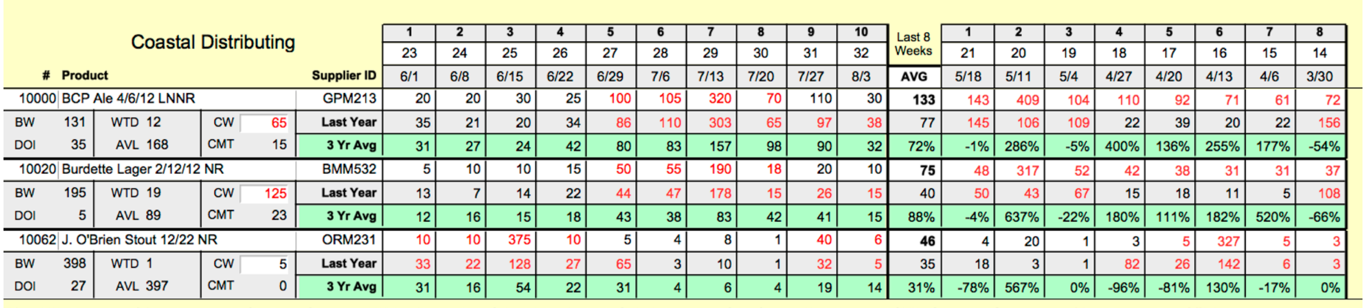
Case Study

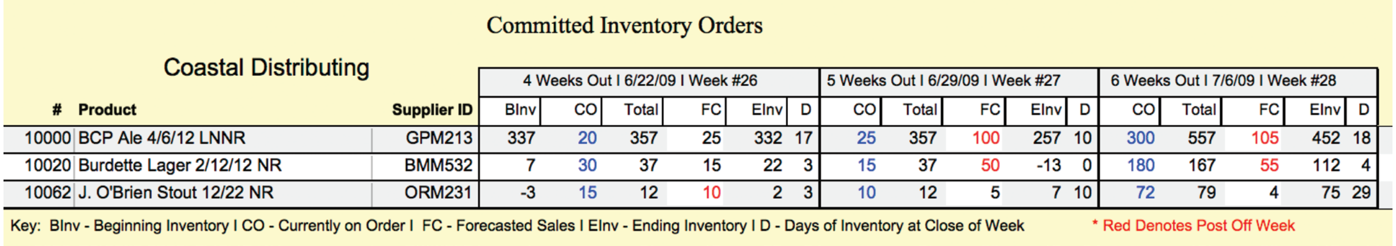
Megan Reed is the Forecast Analyst at a fictitious beer distributor called Coastal Distributing. Coastal has a very sophisticated forecast and ordering system, which is fully integrated with its various supplier networks and route accounting software. Megan can create weekly forecasts by supplier, brand, package etc. up to fifteen weeks into the future, if necessary.



	Coastal Distributing		1	2	3	4	5	6	7	8	9	10	Last 8 Weeks	1	2	3	4	5	6	7	8
			23	24	25	26	27	28	29	30	31	32		21	20	19	18	17	16	15	14
#	**Product**	**Supplier ID**	6/1	6/8	6/15	6/22	6/29	7/6	7/13	7/20	7/27	8/3	**AVG**	5/18	5/11	5/4	4/27	4/20	4/13	4/6	3/30
10000	BCP Ale 4/6/12 LNNR	GPM213	20	20	30	25	100	105	320	70	110	30	**133**	143	409	104	110	92	71	61	72
BW 131	WTD 12 CW 65	**Last Year**	35	21	20	34	86	110	303	65	97	38	77	145	106	109	22	39	20	22	156
DOI 35	AVL 168 CMT 15	**3 Yr Avg**	31	27	24	42	80	83	157	98	90	32	72%	-1%	286%	-5%	400%	136%	255%	177%	-54%
10020	Burdette Lager 2/12/12 NR	BMM532	5	10	10	15	50	55	190	18	20	10	**75**	48	317	52	42	38	31	31	37
BW 195	WTD 19 CW 125	**Last Year**	13	7	14	22	44	47	178	15	26	15	40	50	43	67	15	18	11	5	108
DOI 5	AVL 89 CMT 23	**3 Yr Avg**	12	16	15	18	43	38	83	42	41	15	88%	-4%	637%	-22%	180%	111%	182%	520%	-66%
10062	J. O'Brien Stout 12/22 NR	ORM231	10	10	375	10	5	4	8	1	40	6	**46**	4	20	1	3	5	327	5	3
BW 398	WTD 1 CW 5	**Last Year**	33	22	128	27	65	3	10	1	32	5	35	18	3	1	82	26	142	6	3
DOI 27	AVL 397 CMT 0	**3 Yr Avg**	31	16	54	22	31	4	6	4	19	14	31%	-78%	567%	0%	-96%	-81%	130%	-17%	0%

Key: BW - Beginning of Week Inventory I DOI - Days of Inventory I WTD - Week to Date Sales I AVL - Available Sellable Inventory I CW - Current Week Forecast I CMT - Committed Orders * Red Denotes Post Off Week

The forecast section is relationally connected with real-time sales data, current and future purchase orders, receiving information, target days of inventory and lead times.



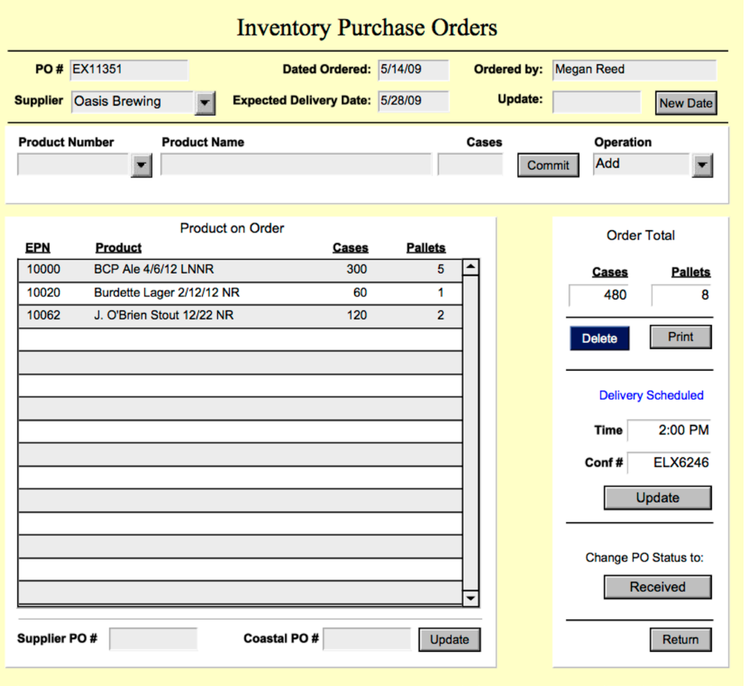
Committed Inventory Orders

	Coastal Distributing		4 Weeks Out I 6/22/09 I Week #26						5 Weeks Out I 6/29/09 I Week #27					6 Weeks Out I 7/6/09 I Week #28				
#	**Product**	**Supplier ID**	BInv	CO	Total	FC	EInv	D	CO	Total	FC	EInv	D	CO	Total	FC	EInv	D
10000	BCP Ale 4/6/12 LNNR	GPM213	337	20	357	25	332	17	25	357	100	257	10	300	557	105	452	18
10020	Burdette Lager 2/12/12 NR	BMM532	7	30	37	15	22	3	15	37	50	-13	0	180	167	55	112	4
10062	J. O'Brien Stout 12/22 NR	ORM231	-3	15	12	10	2	3	10	12	5	7	10	72	79	4	75	29

Key: BInv - Beginning Inventory I CO - Currently on Order I FC - Forecasted Sales I EInv - Ending Inventory I D - Days of Inventory at Close of Week * Red Denotes Post Off Week

In order to perform her duties effectively, Megan meets weekly with sales managers to discuss upcoming events, that the system would not normally recognize, as well as recent sales trends. There is thorough communication between her and the sales, operations and receiving departments. Whenever there is a last minute change to a promotion, or previously unannounced retail ad running that week, she is the first to be notified in order to adjust future forecast numbers and orders.

Because Megan Reed is acutely aware of Coastal's product trends, she can explain specific SKU situations with various employees of the company at any time. For example, the warehouse manager has come to complain to Megan about a new shipment they just received for a certain product that already is taking up an unusually high amount of floor space. The warehouse manager believes that Megan may have ordered too much or that the shipment was a mistake. Megan assures him that Coastal now has the appropriate amount of inventory for this product due to a deep discount starting that weekend as well as three major retail ads running for the next two weeks.



Inventory Purchase Orders

PO #	EX11351	**Dated Ordered:**	5/14/09	**Ordered by:**	Megan Reed
Supplier	Oasis Brewing	**Expected Delivery Date:**	5/28/09	**Update:**	

Product Number	**Product Name**	**Cases**	**Operation**
			Add

Product on Order

EPN	Product	Cases	Pallets
10000	BCP Ale 4/6/12 LNNR	300	5
10020	Burdette Lager 2/12/12 NR	60	1
10062	J. O'Brien Stout 12/22 NR	120	2

Supplier PO #
Coastal PO #

Order Total

Cases	Pallets
480	8

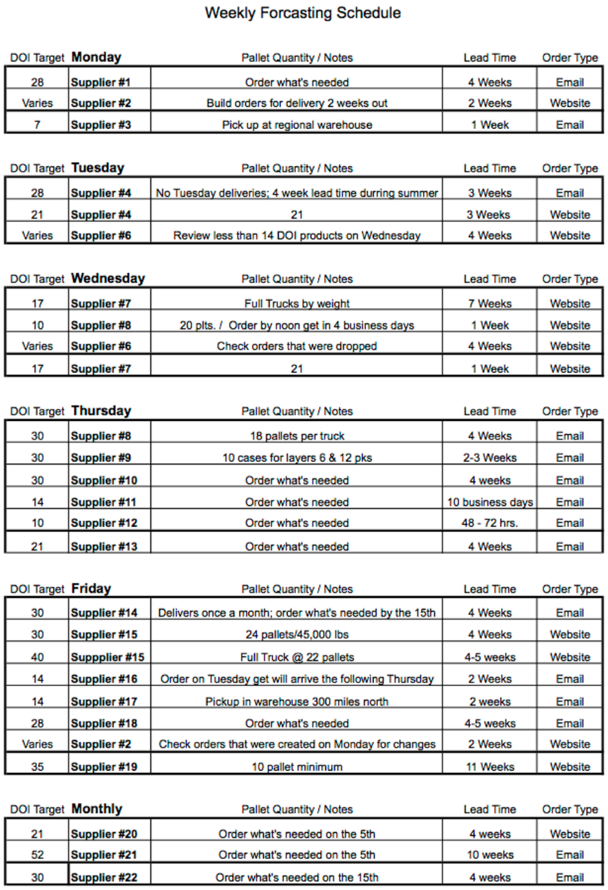
Delivery Scheduled

Time 2:00 PM
Conf # ELX6246

Change PO Status to:

Megan knows more about product movement and trends at Coastal Distributing than any other worker, because her position as the Forecast Analyst demands it.

Megan is a highly organized person who keeps updated worksheets to review what her daily requirements are from suppliers. She has her forecast and ordering system broken out by days of the week as well as monthly dates. She talks daily with multiple suppliers to keep up with order changes, shipping delays, and new product introductions. Megan knows more about product movement and trends at Coastal Distributing than any other worker, because her position as the Forecast Analyst demands it.



Weekly Forcasting Schedule

DOI Target	**Monday**	Pallet Quantity / Notes	Lead Time	Order Type
28	**Supplier #1**	Order what's needed	4 Weeks	Email
Varies	**Supplier #2**	Build orders for delivery 2 weeks out	2 Weeks	Website
7	**Supplier #3**	Pick up at regional warehouse	1 Week	Email

DOI Target	**Tuesday**	Pallet Quantity / Notes	Lead Time	Order Type
28	**Supplier #4**	No Tuesday deliveries; 4 week lead time durring summer	3 Weeks	Email
21	**Supplier #4**	21	3 Weeks	Website
Varies	**Supplier #6**	Review less than 14 DOI products on Wednesday	4 Weeks	Website

DOI Target	**Wednesday**	Pallet Quantity / Notes	Lead Time	Order Type
17	**Supplier #7**	Full Trucks by weight	7 Weeks	Website
10	**Supplier #8**	20 plts. / Order by noon get in 4 business days	1 Week	Website
Varies	**Supplier #6**	Check orders that were dropped	4 Weeks	Website
17	**Supplier #7**	21	1 Week	Website

DOI Target	**Thursday**	Pallet Quantity / Notes	Lead Time	Order Type
30	**Supplier #8**	18 pallets per truck	4 Weeks	Email
30	**Supplier #9**	10 cases for layers 6 & 12 pks	2-3 Weeks	Email
30	**Supplier #10**	Order what's needed	4 weeks	Email
14	**Supplier #11**	Order what's needed	10 business days	Email
10	**Supplier #12**	Order what's needed	48 - 72 hrs.	Email
21	**Supplier #13**	Order what's needed	4 Weeks	Email

DOI Target	**Friday**	Pallet Quantity / Notes	Lead Time	Order Type
30	**Supplier #14**	Delivers once a month; order what's needed by the 15th	4 Weeks	Email
30	**Supplier #15**	24 pallets/45,000 lbs	4 Weeks	Website
40	**Suppplier #15**	Full Truck @ 22 pallets	4-5 weeks	Website
14	**Supplier #16**	Order on Tuesday get will arrive the following Thursday	2 Weeks	Email
14	**Supplier #17**	Pickup in warehouse 300 miles north	2 weeks	Email
28	**Supplier #18**	Order what's needed	4-5 weeks	Email
Varies	**Supplier #2**	Check orders that were created on Monday for changes	2 Weeks	Website
35	**Supplier #19**	10 pallet minimum	11 Weeks	Website

DOI Target	**Monthly**	Pallet Quantity / Notes	Lead Time	Order Type
21	**Supplier #20**	Order what's needed on the 5th	4 weeks	Website
52	**Supplier #21**	Order what's needed on the 5th	10 weeks	Email
30	**Supplier #22**	Order what's needed on the 15th	4 weeks	Email

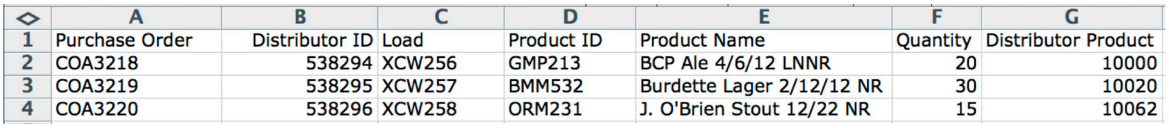
In a perfect world, Megan would be able to create an order file built around each supplier's standards such as this example and upload it to all suppliers. Supplier #1 may require an XML sheet, Supplier #2 needs their order sheet in .csv format and Supplier #3 wants a text file. Regardless of the format, Megan's daily duties of forecasting and ordering product across suppliers would be the same. The only variance would occur when she moves to publish or transmit the information across different delivery systems.

XML Example

```
<?xml version="1.0"  encoding="UTF-8"?>
<!DOCTYPE coastal SYSTEM "coastal.dtd">
<?xml-stylesheet type="text/css" href="coastal.css"?>
<coastal>
   <purchase order id="COA3218">
      <date>06/22/2009</date>
   <distributor id>528294</distributor id>
   <load id="XCW256>
         <product id id="GMP213">
            <product name>BCP Ale 4/6/12 LNNR</product name>
            <quantity>20</quantity>
            <distributor product>10000</distributor product>
         </product id>
         <product id id="BMM532">
            <product name>Burdette Lager 2/12/12 LNNR</product name>
            <quantity>30</quantity>
            <distributor product>10020</distributor product>
         </product id>
         <product id id="ORM231">
            <product name>J. O'Brien Stout 12/22 NR</product name>
            <quantity>15</quantity>
            <distributor product>10062</distributor product>
         </product id>
      </load id>
   </purchase order>
</coast>
```

This results in higher margins and leaner inventory levels.

CSV Example



	A	B	C	D	E	F	G
1	Purchase Order	Distributor ID	Load	Product ID	Product Name	Quantity	Distributor Product
2	COA3218	538294	XCW256	GMP213	BCP Ale 4/6/12 LNNR	20	10000
3	COA3219	538295	XCW257	BMM532	Burdette Lager 2/12/12 NR	30	10020
4	COA3220	538296	XCW258	ORM231	J. O'Brien Stout 12/22 NR	15	10062

Text Example

```
COA3218 538294  XCW256  GMP213  BCP Ale 4/6/12 LNNR        20    10000
COA3219 538295  XCW257  BMM532  Burdette Lager 2/12/12 NR  30    10020
COA3220 538296  XCW258  ORM231  J. O'Brien Stout 12/22 NR  15    10062
```

Finally, Megan meets weekly with her manager to review her results from the previous weeks' sales and what her recommended forecast was. This routine helps her perform her job better, as well as providing her manager an understanding of where the trends are moving the company. Coastal Distributing's forecasting and ordering program gives Megan an accuracy rating for all SKUs that comprise the entire company, which is saved historically over time. This is especially useful if she moves onto another position in the future at Coastal and a new employee assumes her current duties as the Forecast Analyst.

By working with a comprehensive system that allows more time for analysis instead of constantly entering data, both Megan and Coastal Distributing are able to achieve a higher level of forecast accuracy. This results in higher margins and leaner inventory levels, factors any distributor would want.

Conclusion

Forecast accuracy should be a factor for both distributors and suppliers alike to consider as technologies advance and the cost of equipment continues to drop when updating their backend systems.

The purpose of this white paper was to highlight, explain and create future considerations for the advancement of forecasting future beer sales and the process around how distributors and suppliers can work together to achieve this attainable goal.

Forecasting accurate beers sales is extremely complicated and requires lots of coordination from both IT systems and human interaction. But by the examples given in this white paper, the benefits should be clear for suppliers and distributors alike that the investment and changes necessary to adopt this environment are well worth it.

Distributors would like to have the option in the future to push orders to all suppliers, but this will not be accomplished properly on a consistent basis if forecasting is not a core component of order building.

It is very important for both parties to work together in the future as the savings gained and elevated efficiency levels that are possible are now clearly apparent. Forecast accuracy should be a factor for both distributors and suppliers alike to consider as technologies advance and the cost of equipment continues to drop when updating their backend systems.

biecc
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