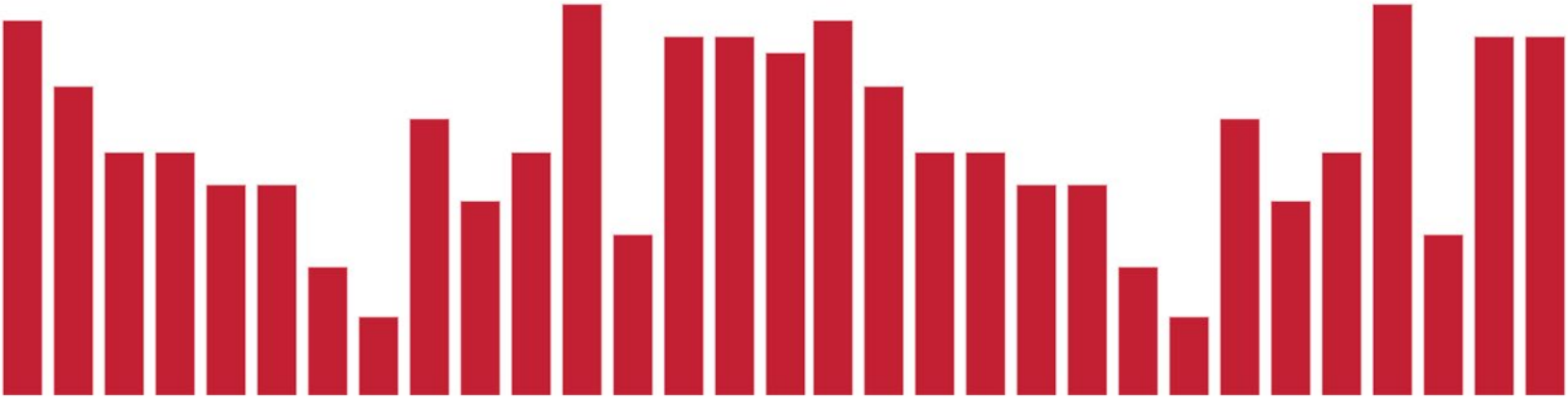

Identifying Business Growth Opportunities Using Historical Data

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Identifying Business Growth Opportunities Using Historical Data

By Kent J. Schultz, CEO – BIG Consulting, LLC

Any business organization that markets products sold repetitively (e.g. – fertilizer sales to crop farmers or LP gas sales for home heating) will experience a certain degree of customer churn due to a multitude of factors which may include competitive options, market changes, turnover in sales personnel, etc. Experiencing reduced (or even complete loss of) sales due to these and other factors is normal, especially in businesses that have hundreds or thousands of customers they are serving. This leads to the basic business questions of:

- **Who** are these formerly good customers that the business should target?
- **What** products and volumes did they purchase in previous years?
- **When** did they last buy from us?
- **Where** are they acquiring these products today?
- **Why** did they leave or significantly reduce their volume of business?
- **How** do you identify those "lost" customers?

Simple questions with not-so-simple answers. Most ERP systems in use today contain all the data necessary to answer these questions. Unfortunately, extracting multiple years of historical data for large numbers of customers and then transforming it ***efficiently*** into ***effective*** reports presents an enormous challenge that few people are willing to embrace or able to execute. This white paper describes BIG Consulting's proprietary approach through business intelligence in assimilating the data necessary to answer the questions above.

Business Case

We will use sample data from a large Midwest agricultural cooperative that sells fertilizer to farmers as an example scenario. Identifying year-over-year (YoY) changes in customer purchase volumes of fertilizer can be particularly challenging due to the multitude of products available, different formulations (DAP vs. MAP), and the potential influence of weather on what products can be applied and when. Tracking YoY variances for dry or liquid fertilizer, when so many products and different units of measure are available (see EXHIBIT A), exacerbates the development of appropriate metrics.

Solution

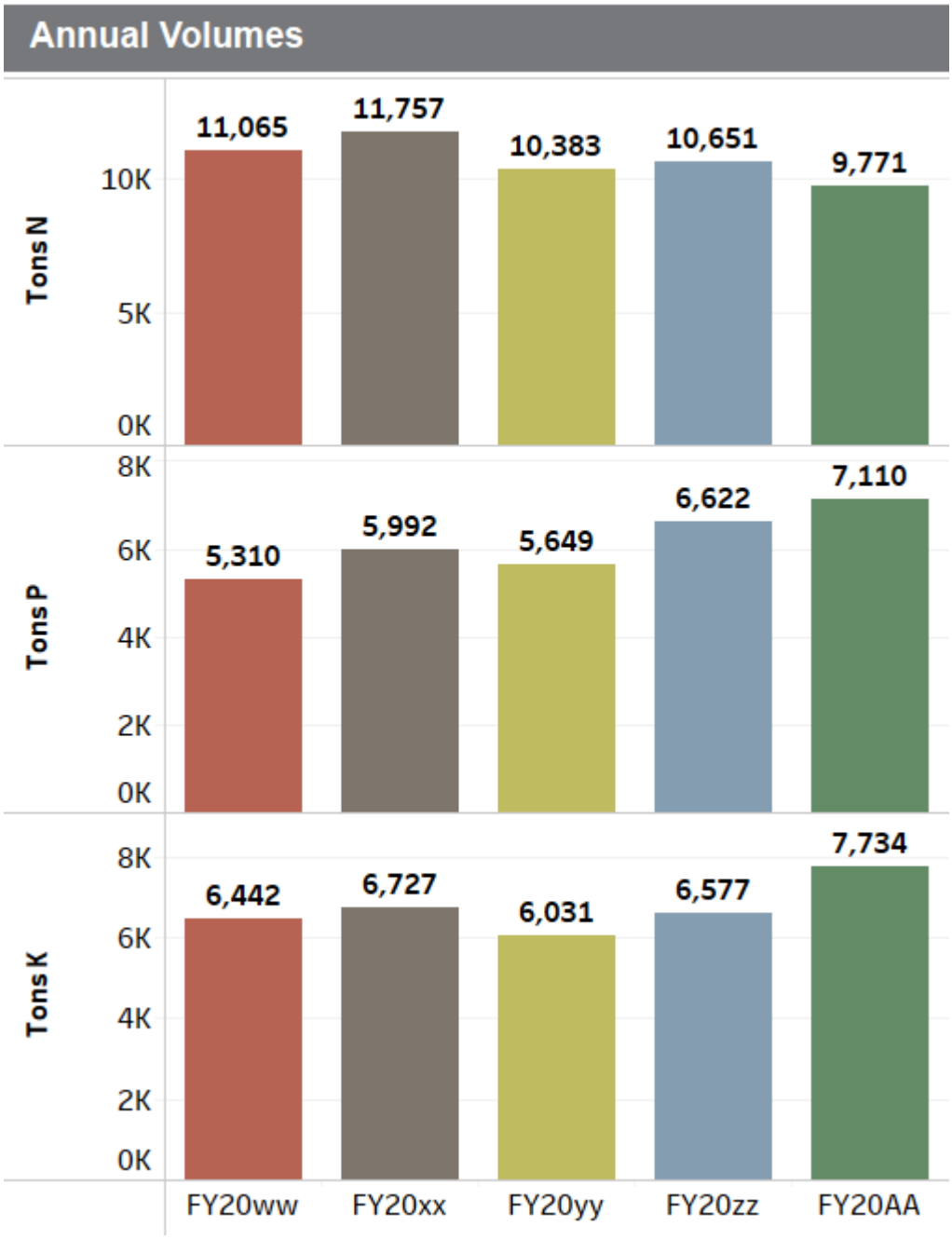
To properly address the unique issues presented in this Business Case, we first needed to bust through a paradigm that is prevalent throughout the fertilizer industry – annual auditor reports typically list YoY fertilizer volume sales in three categories: Anhydrous, Dry Fertilizer, and Liquid Fertilizer tons. Auditors can convert gallons, pounds and 50# bags (as seen in EXHIBIT A on **Page 2**) to tons, but when all fertilizer products are condensed to those three categories, are they truly measuring progress realistically?

Our approach to this conundrum is to think outside the box and convert ALL fertilizer products to the tons of ***nutrients*** that are delivered to the customers. For example, the 8,796 tons of MAP that were sold in 20AA would be converted to 967.56 tons of actual Nitrogen and 4,573.92 tons of actual Phosphorus delivered to customers (8,796 x 11% N and 52% P respectively).

EXHIBIT A

			FY20ww	FY20xx	FY20yy	FY20zz	FY20AA
AG-LIME TONS	TON	AG-LIME TON	605	1,081	418	578	6,011
82% NH3-TONS	TON	82% NH3 TON				2	3
STABILIZED UREA	TON	UREA STABILIZED TON		26			
12-40-00-10S-1ZN MES	TON	MICROESSENTIALS SZ TON 12-40-00-10S-1ZN	346	2,048	2,707	3,821	3,802
18-46-0 DAP	TON	18-46-0 DAP	9,727	9,533	0		
11-52-00 MAP	TON	11-52-00 MAP	11	18	7,347	7,265	8,796
0-0-61 POTASH	TON	0-0-61 POTASH	10,428	10,476	9,401	10,042	11,418
46-0-0 UREA	TON	46-0-0 UREA	16,915	16,542	13,864	12,474	10,532
ESN 44-0-0 UREA	TON	ESN 44-0-0 UREA TON	688	694	1,149	1,394	1,158
SULFUR 90% BULK	TON	SULFUR 90% BULK	616		0		
		SULFUR 85% XP BULK	31	634	447	445	544
21-0-0-24 AMS BULK	TON	21-0-0-24 AMS BULK-FERT	2,026	2,350	2,390	2,555	2,807
ZINC 34%	TON	ZINC 35.5% BULK TON	34	43	26	28	55
10-34-0 LIQ STRT	TON	10-34-0 LQ STRT	2,005	2,264	2,194	2,130	1,869
28% UAN	TON	28% LIQ FERT TON BR	412	1,625	1,440	917	57
		28% LIQ FERT TON	1,211	1,106	1,505	1,514	44
32% NITROGEN	TON	32% LIQ FERT TON	285	1,060	967	1,977	4,105
THIOSOL TONS	TON	THIOSOL 12-0-0-26 TON			267	665	601
LIQUID FERT-GALS	GAL	6-24-6 LIQUID FERT GAL					27,674
		7-23-5 XLR-RATE GAL	24,145	24,027	26,422	18,716	1,083
		OPTISTART LOCAL GAL		1,100	185		250
		THIOSOL 12-0-0-26 GAL	17,492	57,443	-4,393		
		ZINC CHELATE-9% GAL	4,141	5,060	5,291	12,792	9,139
		BLUE TSUNAMI ZINC 10% GAL	73				
		ZINC 10% ORIGIN-BULK	7,759	7,307	5,928		
		ZINC 10% CITRI-CHE 2.5 GAL	433	328	418	5	
		BORON LIQUID 10% 2.5 GAL				13	
DRY FERT-TONS	TON	ASPIRE II 0-0-58-.5 TON	133	574	512	538	484
LIQUID FERT-TONS	TON	10-30-0 LIQ FERT	34	30			
		16-0-3 LIQUID FERTILIZER	157	154	24		
		16-0-3-2S LIQUID FERTILIZER	106	105	43		
		0-0-62 SOLUBLE	6	5			
		12-3-3-1 LIQUID FERTILIZER	50	25			
FERTILIZER-MISC	BAG	27-14-14 FERT 50# BAG	369	363	38	37	
		5-14-42 FERT 50# BAG	13	133	24	12	
		19-0-0 50# .10% DIMENSION AM		440			
		23-0-15 4% S 50# BAG		41	49	28	31
		10-10-10 FERT BAG 20#				29	27
		DAP 18-46-0 FERT 50# BAG	1				
		AMS 21-0-0-24 50# BAG		40	42	97	53
		27-0-7 FERT 50# BAG	42				
		19-19-19 FERT 50# BAG		2			20
		30-0-10 FERT 50# BAG	27	1			
		UREA 46-0-0 50# BAG	50	39	17	25	7
		9-23-30 FERT 50# BAG	359	85	1		11
		POTASH 0-0-60 FERT 50# BAG	20				
		SULFUR 90 50# BAG	300	10	8		10
		24-12-12-6S FERT 50# BAG	61	6	73		
	LBS	BORON 15% BAG LBS	8,920	1,164	2,525	7,749	13,097
		LIME HI CAL SIGNATURE LBS	4,200	4,300	300		
		MANGANESE SULF 32% MAXI LBS	13,496	9,667	12,654	6,379	1,993
		MAGNESIUM OXY SULF 36% LBS	250	200	200	0	
		COPPER SULFATE 50# BAG LBS	100		200	100	273
		CALCIUM CHLORIDE FLAKE LBS (AGRONOMY)			50		

Converting all fertilizer products (like those listed above) to their ***nutrient*** tonnage, rather than raw ***product category*** tons, results in a visualization of the true progress made in YoY fertilizer sales:



The above visualization represents four years of historical data and the current year's (20AA) progress at the time data was updated (through nine+ months of fiscal year 20AA). We only illustrated N, P, and K in this example, but have also included Sulfur and Zinc for some clients. With the appropriate metric of nutrient tons established, we can now determine ***relevant*** answers to the business questions posed earlier. Since the chart above clearly identifies this retailer has achieved

excellent YoY growth in their Phosphorus and Potassium sales, we will focus our analysis on Nitrogen sales to determine what opportunities may exist to achieve increased market penetration.

The Process

First, we need to establish the potential nutrient volumes for **each** customer based on their historical purchases (we require at least four years of history to more accurately calculate this value). We have developed an algorithm that assesses historical purchases and factors possible crop rotation variances to determine a Target Nutrient quantity for each individual customer. These volumes are then aggregated to display the retailer's total Target Nutrients for the current fiscal year. The table below illustrates these calculations for our example dataset:

FY20zz	FY20AA	Target Nutrients	+ / - Target	CY Pct of Target	CY Growth Nutrients
10,651	9,771	11,411	-1,640	85.63%	-880

The algorithm determined that a target amount of 11,411 tons of Nitrogen should be achieved in 20AA based on the previous four years of historical data. We provide a parameter control that allows our clients to increase or decrease this calculation up to +/- 10% should they feel an adjustment is necessary. With the target established, the balance of the table reflects both progress towards this goal and a comparison of the current year's (CY) results to date with the prior year's total volume. With 80% of the selling season completed vs. achieving over 85% progress toward the Target Nutrients, this retailer is on track to meet or exceed their goal for Nitrogen.

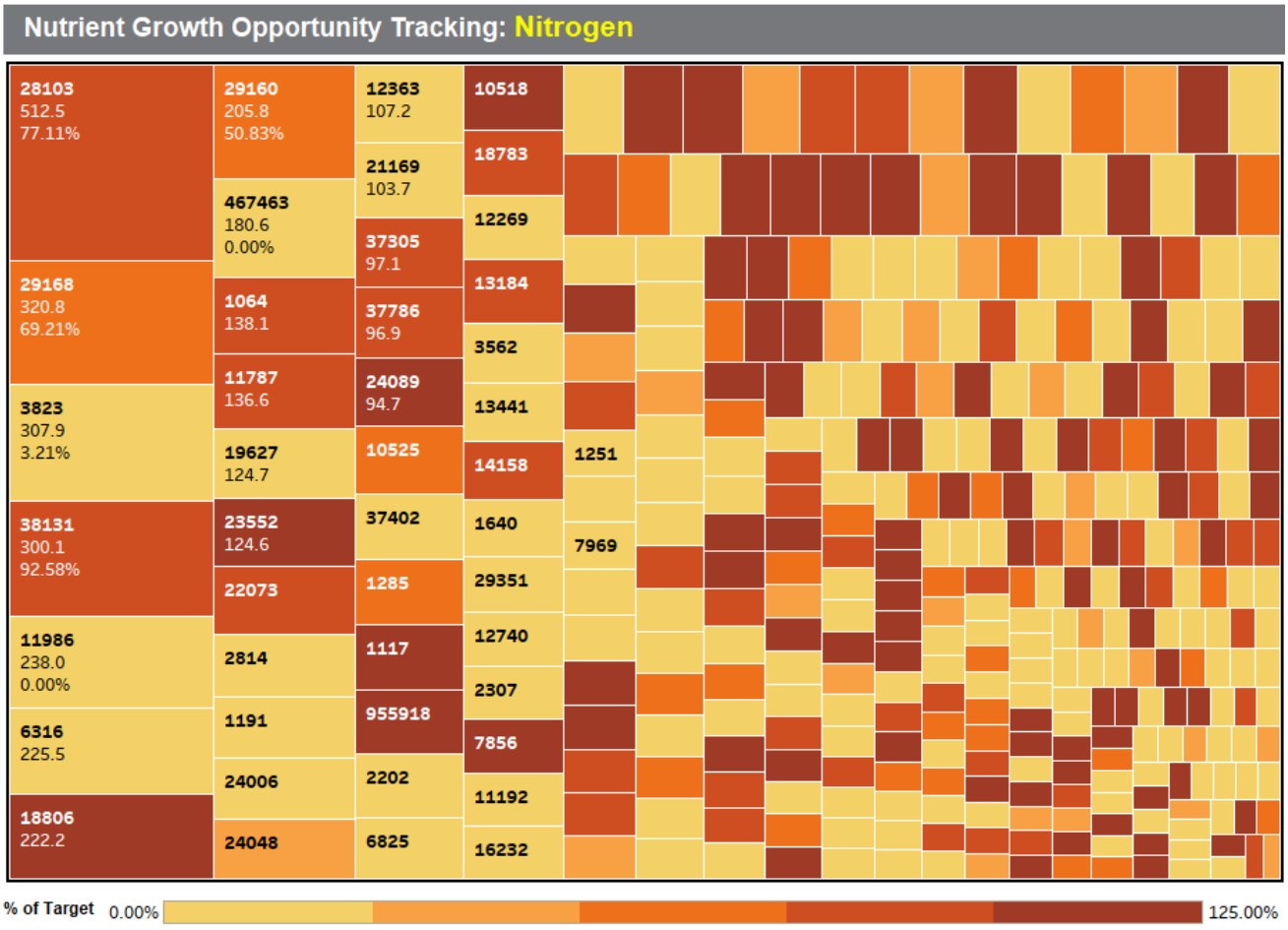
Next, we need to identify **Who** to target our selling efforts with from the 1,090 customers that this retailer had made historical sales of Nitrogen. As stated previously, our focus is to identify customers whose volume of business has either ceased or dramatically decreased over the last few years. Our team at BIG Consulting has developed a unique, proprietary process that immediately targets these customers.

We start by defining minimum Target Nutrient levels relevant to maximizing the retailer's growth opportunity. There is no set "rule of thumb" to determining the appropriate amount due to varying factors driving each market. For this example, we have set that minimum to 10.0 tons of Nitrogen. Applying that filter to the data reduces the pool of customers to 348, or 32% of the historical Nitrogen customer base. Let's explore the results of the process by introducing a relatively new method of visually displaying the filtered customers. The graphic on **Page 5** is a tree map, which illustrates all 348 customers in rectangles that are sized based on their individual Target Nutrient amount. Each rectangle is labeled with three elements:

- **Customer Name** – changed to Account Number to protect confidentiality for this example
- **Target Nutrient Volume** – tons of Nitrogen
- **Percent of Target Achieved** – as of YTD

As the rectangles decrease in size, there is not sufficient space to display all this information. The interactive tree map allows the user to scroll their mouse over the individual rectangles to display a tool tip containing the same data plus other relevant information. Also, note the color legend below the tree map. Each rectangle is shaded based on the progress (expressed as a percentage) each customer has made toward their Target Nutrient amount. The colors graduate from yellow (less

than 25% of Target Nutrients sold to date) through varying shades of orange in 25% increments, with those customers surpassing their Target Nutrients easily identified by the burnt orange shading.



Sales managers enjoy the ease of assessing nutrient sales progress when displayed in this manner. Obviously, the goal is to have a minimal amount of yellow shaded rectangles (< 25% of Target Nutrients purchased) by year's end. At this point in time, within our example, there were still 151 customers (43%) shaded yellow. Filtering the tree map to only display these 151 yellow-shaded customers reveals an even more interesting scenario summarized in the table at the top of **Page 6**. Notice there was Nitrogen volume growth of 543 tons (15% YoY) with these customers from year 20ww to 20xx, followed by a decrease of 1309 tons (32%) the next year (at least partially attributed to significant rains that forced acres to be planted to soybeans rather than corn). The more troubling aspect of the data is that 20zz was a normal weather year and yet saw a further decline of another 170 tons (6% YoY) of Nitrogen. Finally, the truly alarming data is the results thus far in 20AA. The 151 customers identified have only purchased 154 tons of Nitrogen, which represents **only 4%** of their average purchases in the first two years of our historical records. Imagine the impact of recapturing only another 1,200 tons of Nitrogen sales from these customers (~50% of 20zz). At a very conservative projected gross margin of $100/ton, that's $120,000. The people, equipment, and related infrastructure are already in place to sell, deliver, and apply these nutrients, so the vast majority of that gross margin gain goes straight to the bottom line.

Tons History: Nitrogen				
FY20ww	FY20xx	FY20yy	FY20zz	FY20AA
3,562	4,105	2,796	2,626	154

The table below further summarizes the data we have been examining. In evaluating the historical purchases of our 348 customers with Target Nutrient volumes greater than 10 tons, we notice that these 32% of all fertilizer customers make up an average of **over 81%** of this retailer's total Nitrogen sales annually. That's not the 80:20 rule, but it does validate our decision to use 10 tons as the Target Nutrient volume. As indicated earlier, our process allows the analyst to enter a target amount appropriate for their assessment purposes.

		Nitrogen Tons				
	Count	20ww	20xx	20yy	20zz	20AA
All Customers	1090	11,065	11,757	10,383	10,651	9,771
>= 10 ton Target	348	8,750	9,922	8,633	8,932	7,571
Percent of Total	**31.9%**	**79.1%**	**84.4%**	**83.1%**	**83.9%**	**77.5%**

The illustration on the next page is a snapshot of the compilation of visualizations we have been examining into a singular dashboard. This dashboard provides a comprehensive, yet concise, representation of the key metrics necessary to identify opportunities that will enable this retailer to grow their business with reliable, known customer information. It is critical to organize each visualization within a dashboard in a manner that is both compelling and relevant. We also build filtering capabilities so that the user can quickly perform a vast array of queries to meet their unique analysis requirements. The filters for the ***Nutrient Growth Opportunities*** dashboard are located on the right side of the display and include the following elements:

- **Nutrient** – a dropdown menu to choose one category of nutrient information to display
  - Standard choices of Nitrogen, Phosphorus, and Potassium
  - Optional additional nutrients such as Sulfur, Zinc, etc.
- **Opportunity Factor** – slider used to set percentage of records to display
  - When set at 100%, all customers are displayed
  - See Page 8 for how to adjust settings with this filter to refine the data display
- **Target Growth Factor** – dropdown parameter to adjust Target Nutrients calculation
  - Range of + / - 10% in 2% increments to adjust volume of Target Nutrients
- **Target Nutrient Tons** – slider used to select minimum/maximum amount per customer
- **CY Pct of Target Nutrients** – slider used to set range of Target Nutrients per customer
  - This filter was set at a range of 0% to 25% to find the 151 "yellow" customers
- **Salesperson** – dropdown filter listing all salespeople serving the customers
  - Filters each visualization to display only that salesperson's assigned customers
- **Name Search** – dynamic filter to select singular or multiple customers for data display

Nutrient Growth Opportunities

Tons History: Nitrogen

FY20ww	FY20xx	FY20yy	FY20zz	FY20AA
8,750	9,922	8,633	8,932	7,571

Target Nutrients	+/- Target	CY Pct of Target	CY Growth Nutrients
9,427	-1,856	80.31%	-1,361

Nutrient: Nitrogen

Opportunity Factor: 0.00% – 100.00%

Target Growth Factor: 0%

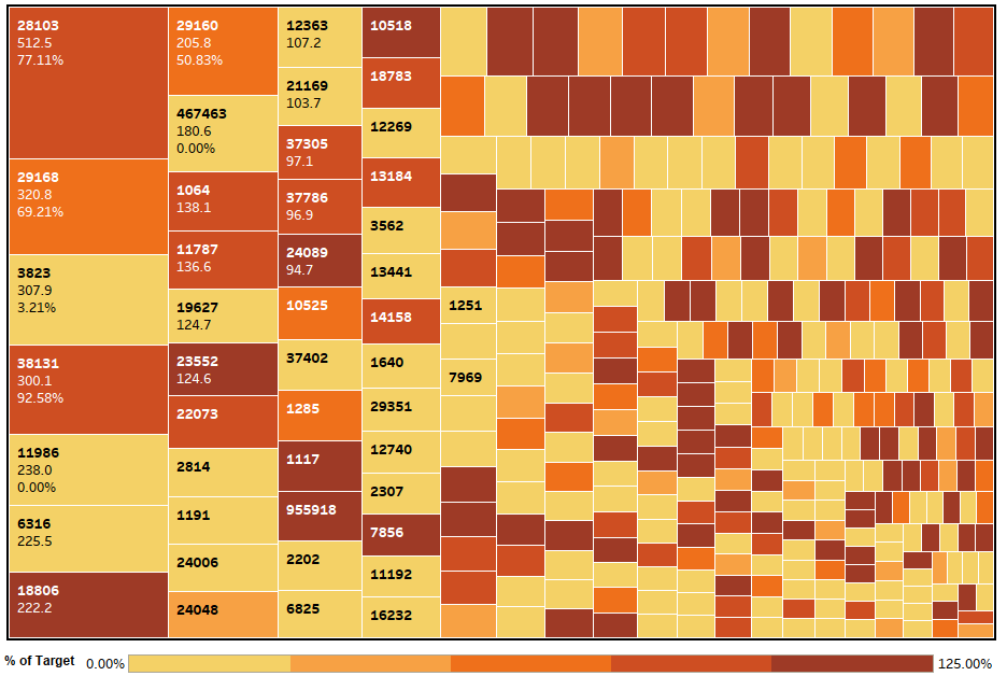
Target Nutrient Tons: 10.0 – 512.5

CY Pct of Target Nutrients: 0.00% – 13275.66%

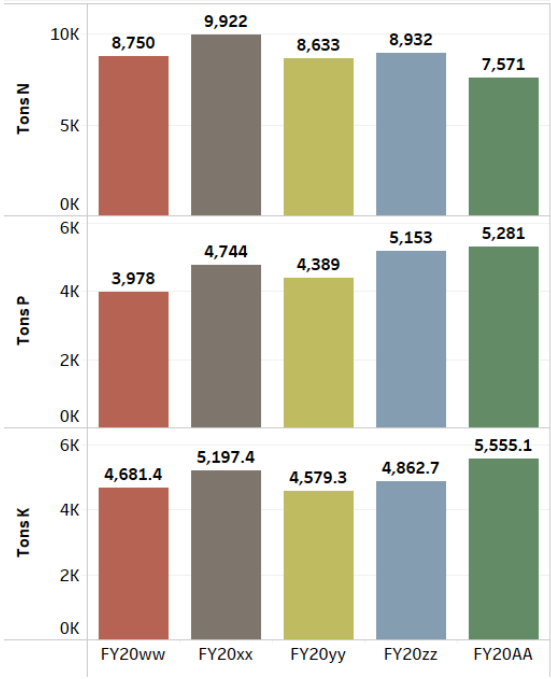
Salesperson: (All)

Name Search: (None)

Nutrient Growth Opportunity Tracking: Nitrogen

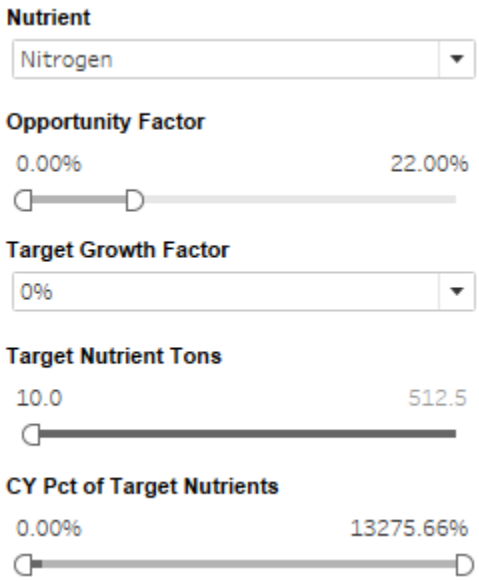


Annual Volumes



The Analysis Refined

The filters that facilitate various analyses on the Nutrient Growth Opportunities dashboard can assist us further by honing in on the answers to our opening questions. We earlier identified a very large opportunity with the 151 customers who are below 25% of their Target Nutrients. Now we will reset our filters to focus on finding those customers who have significantly reduced their purchases of Nitrogen from previous years' levels. We will assume our Target Nutrient calculation is reasonably accurate by keeping the Target Growth Factor set at **0%**. (We have already established that a setting of **10** for Target Nutrient Tons is appropriate for this dataset.) To make sure we don't leave anyone out of the analysis, we set the CY Pct of Target Nutrients at its maximum by moving the slider completely to the right.



That leaves **Opportunity Factor** as the final filter to complete our data refinement. The Opportunity Factor is the element of our proprietary process that sorts through all the years of data from the 1090 customers to identify only those that have had a significant reduction in the volume of their purchases as compared to previous history. Think of it as the process identifies the "biggest losers" to target our sales and marketing efforts. For this example, we have chosen to set the filter at 22%. The results are reflected in the dashboard displayed on the next page.

Our process found 124 customers to display in the tree map that have met the criteria of our filter settings. Taking a closer look at the results reveals some startling facts:

		Nitrogen Tons				
	Count	**20ww**	**20xx**	**20yy**	**20zz**	**20AA**
All Customers	1090	11,065	11,757	10,383	10,651	9,771
22% biggest losers	124	3,929	4,165	2,523	384	1,113
Percent of Total	**11.4%**	**35.5%**	**35.4%**	**24.3%**	**3.6%**	**11.4%**

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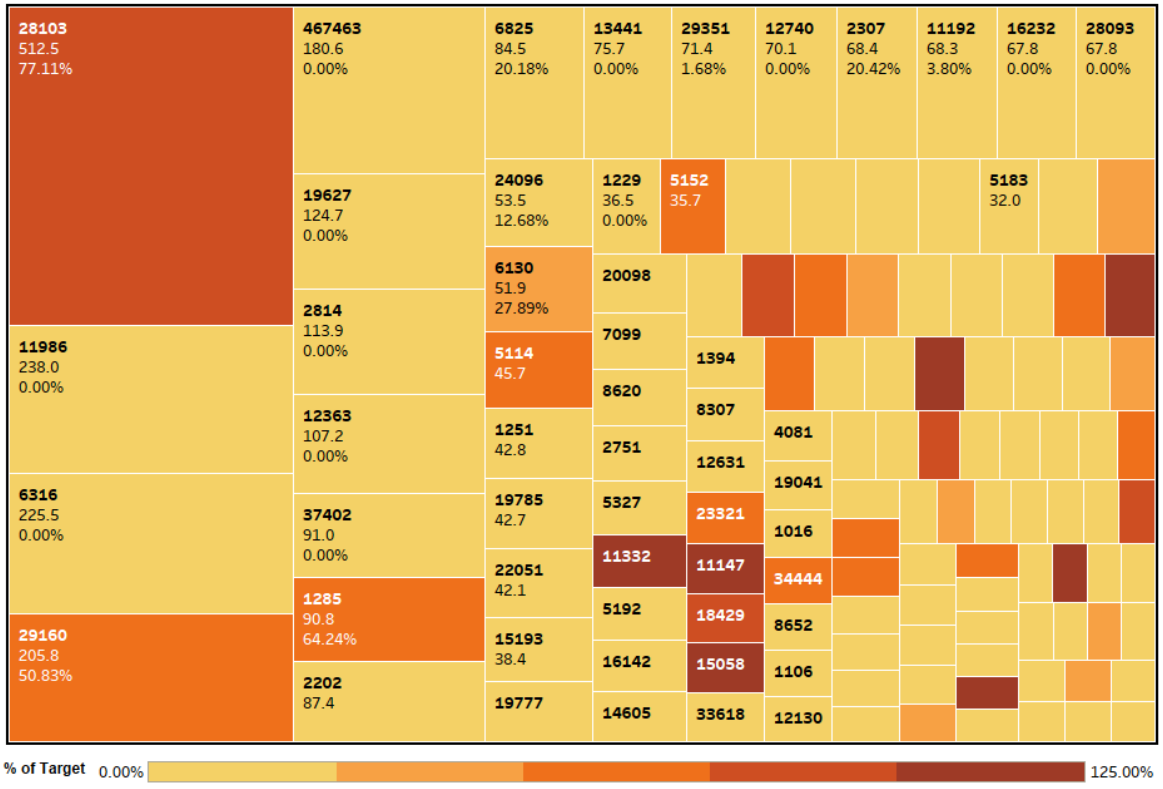
Nutrient Growth Opportunities

Tons History: Nitrogen

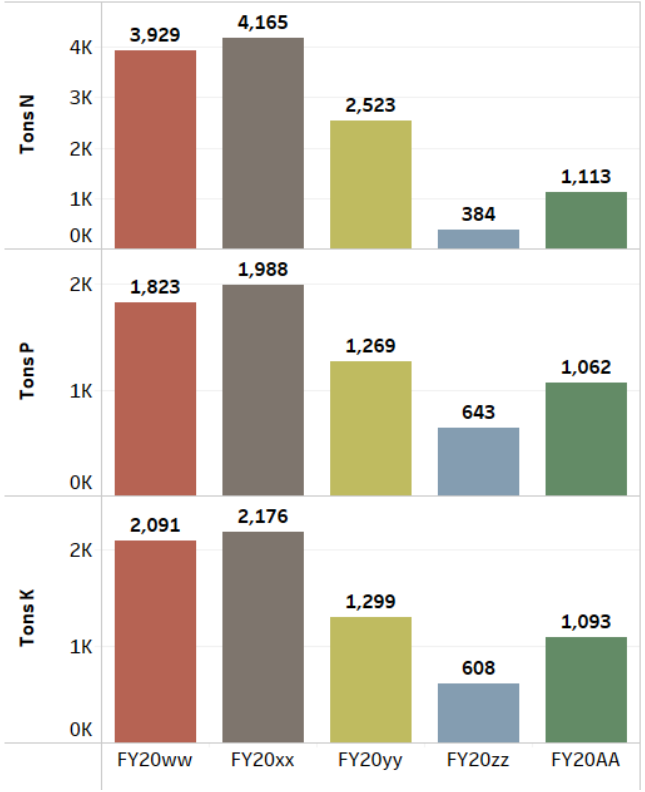
FY20ww	FY20xx	FY20yy	FY20zz	FY20AA
3,929	4,165	2,523	384	1,113

Target Nutrients	+/- Target	CY Pct of Target	CY Growth Nutrients
4,047	-2,934	27.50%	729

Nutrient Growth Opportunity Tracking: Nitrogen



Annual Volumes

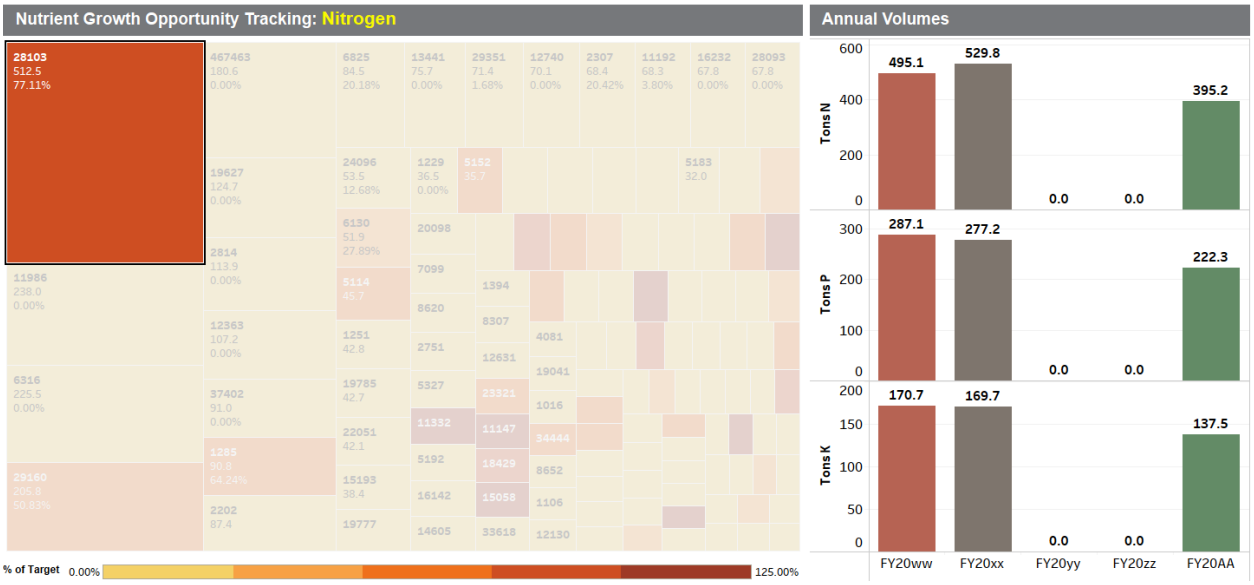


These 124 customers purchased large volumes of Nitrogen from this retailer in 20ww and increased in 20xx. The loss of corn acres due to excessive rains may have contributed to some of the reduction in tons seen in 20yy. However, in 20zz these same 124 producers reduced their collective purchases by **over 90%** when they had been purchasing over 1/3 of the total Nitrogen sold.

Notice also the bar graphs (see dashboard on previous page) depicting the nutrient volumes for N, P and K. These 124 customers weren't just purchasing their Nitrogen somewhere else in 20zz – this retailer also lost a significant portion of their Phosphorus and Potassium tons as well.

Transforming Data into Results

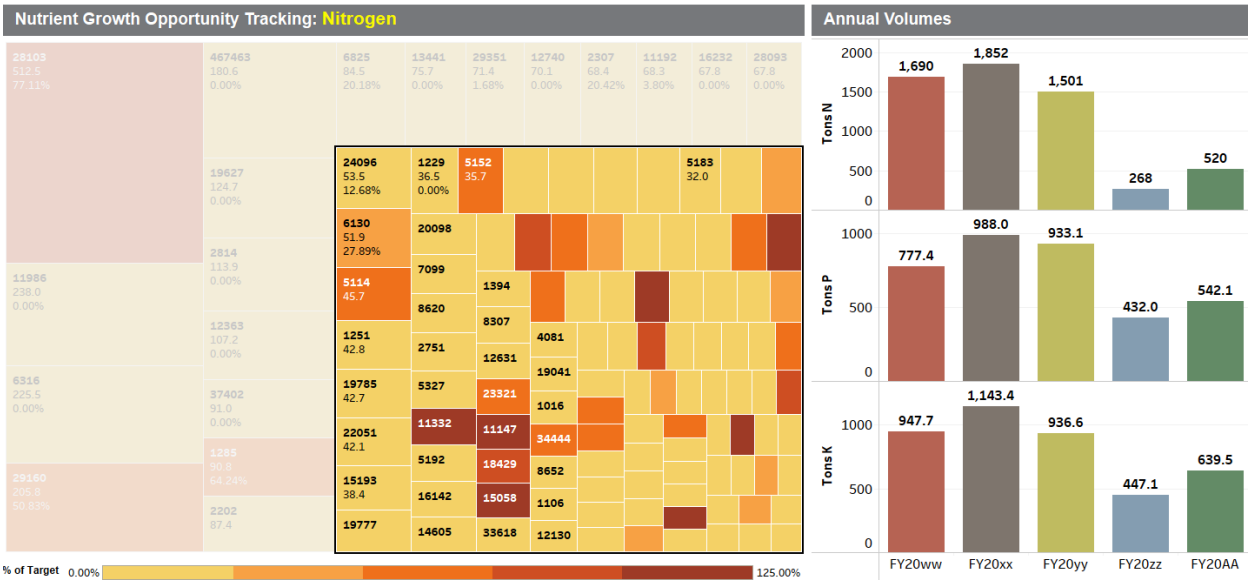
This retailer did not ignore what the Nutrient Growth Opportunities dashboard identified. They proceeded to have their salespeople focus efforts on re-establishing relationships with these customers and after nine+ months in 20AA the results were significant. Nutrient sales in all three categories had increased dramatically. Let's look at a couple of examples to measure the results more specifically. Additional critical elements are linked to the dashboards providing further analytic capabilities. When we click on the rectangle in the upper left corner of the tree map, we immediately filter to Customer 28103's results:



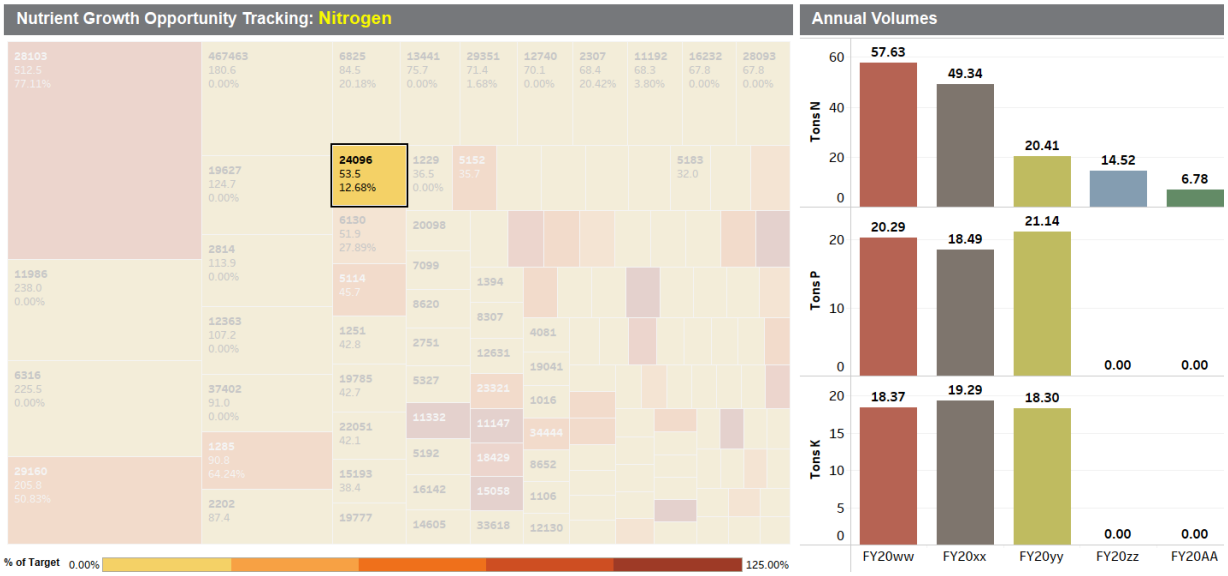
This retailer had lost the entire fertilizer business from this customer for the previous two years. Though sales at this point in time were not yet to target nutrient volumes, they were significant. Recapturing this business returned over $75,000 in gross margin to the retailer. Some might argue that this customer is an exception – since they were also the largest identified customer, the retailer knew their history and would have targeted them without using our tool to identify them. That's a fair challenge. In fact, we coach our clients to focus on the "bread and butter" clients – those whom they were likely not aware of their volume reductions.

The dashboard on the next page illustrates the results when we drag our mouse over the rectangles highlighted to identify 105 customers in this section of the tree map. Though not quite as dramatic a reduction when the 19 largest customers are not included, Nitrogen volumes for these 105 customers decreased 85% in 20zz compared to 20xx. Likewise, Phosphorus volumes were down 56% and Potassium down 61%. The results thus far in 20AA are encouraging and prove that

knowing who to target can improve **sales efficiency** and generate **positive returns** for the business. It is important to note that there is a story behind every single customer (rectangle) displayed in the tree map. There will be some customers that may have retired, a competitor sold the customer at an unprofitable level, a reduction in acres farmed, etc.



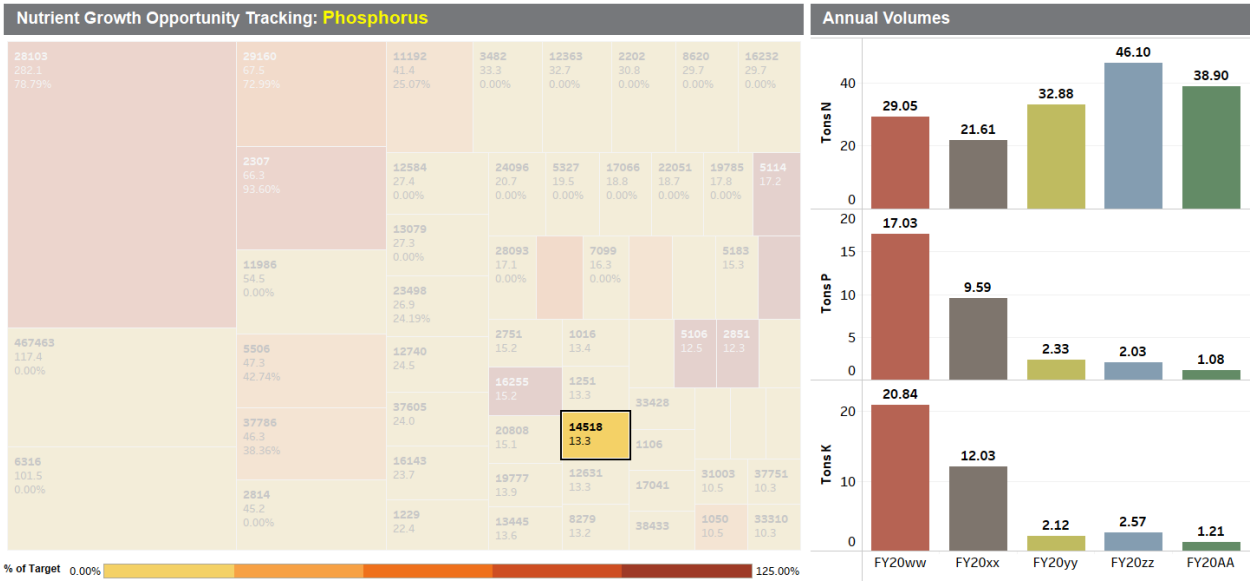
It is essential for salespeople to determine what the story is for each customer identified by the Nutrient Growth Opportunities dashboard and then focus on those who are realistic targets for recapturing the business. Reviewing the data for another singular customer is highlighted in the dashboard below. Customer 24096 has only purchased 6.78 tons (12.68% of their 53.5 ton Nitrogen target) thus far in 20AA, which continues the steady, dramatic decline in purchases over the past several years. The data also illustrates that the retailer has completely lost the P and K tons. This customer appears to have switched their fertilizer business to a competitor and the retailer is only getting the convenience sales of Nitrogen due to field location. The opportunity has been identified and now a plan can be developed for an attempt to recapture the entire fertilizer business from this customer.



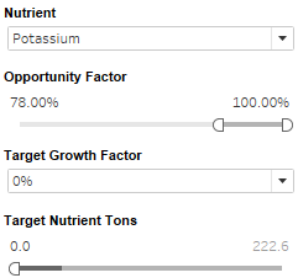
This retailer recognized the value of our dashboard when we introduced it to them early in the first quarter of the 20AA fiscal year. They implemented it with their sales team and achieved notable results for this partial year and have continued to deploy it successfully in succeeding years.

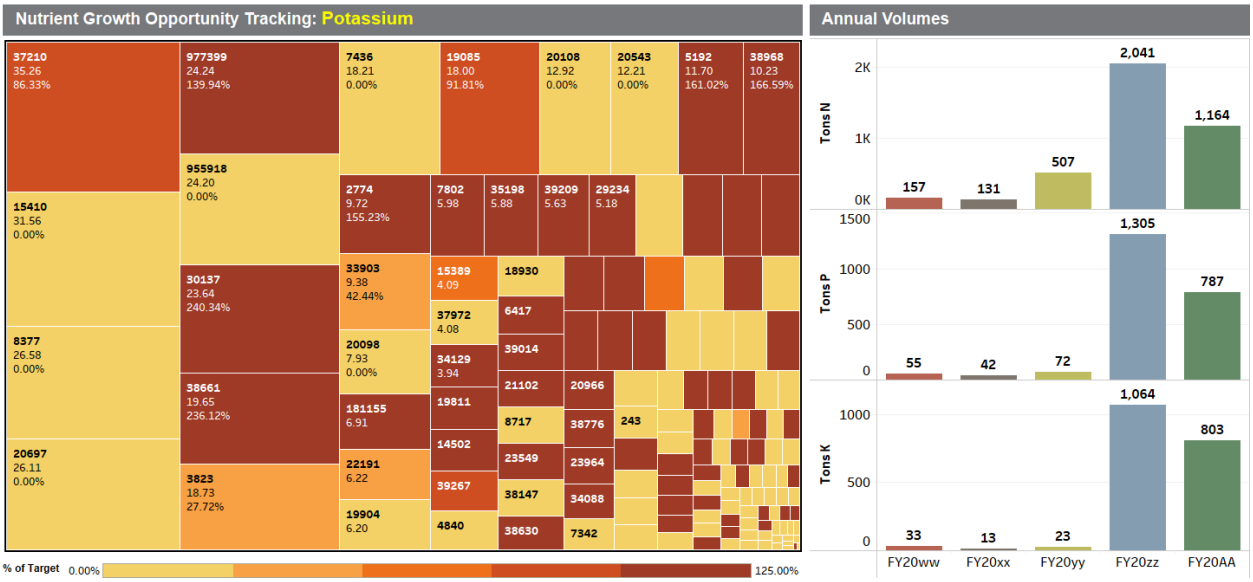
Other Applications of The Process

As the power of the Nutrient Growth Opportunities dashboard has been applied by our clients, new insights have been uncovered over the past several years. One client asked us to display more than four years of historical data in the volume bar chart and then noticed a concerning trend with many of their individual P & K customers. They spotted a significant pattern of continual reductions in P & K tons similar to what we see for Customer 14518 in the dashboard below. Nitrogen purchases increased, but cost cutting measures (due to low commodity prices) were undertaken to reduce P & K inputs with the hope that residual nutrients in the soil would be enough to produce a good crop. Our client's salespeople shared the bar chart data with the affected customers when they sat down to develop the following year's cropping plan. The customers were impressed with the approach to measure nutrient tons rather than product tons and recognized they were jeopardizing their potential yields by "mining" the soil. The result was this retailer realized significant sales increases in P & K the following growing season, even though grain commodity prices remained depressed.



Another client asked us to generate a report showing the **growth** customers. Using the data from our demonstration retailer again, we will examine their Potassium tons to answer this question using the same dashboard (see **Page 13**). Applying reverse logic in changing the Opportunity Factor range while also setting Target Nutrient Tons to zero, as shown below, allows the retailer to identify the customers that had the largest increases (or were new customers).

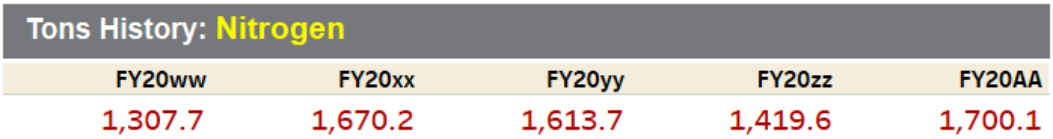




The dashboard filters immediately identified 140 mostly new Potassium customers that also were new purchasers of Nitrogen and Phosphorus as well. The data is summarized below.

		Potassium Tons				
	Count	**20ww**	**20xx**	**20yy**	**20zz**	**20AA**
All Customers	969	6,442	6,727	6,031	6,577	7,734
22% biggest **gainers**	140	33.0	13.0	23.0	1,064.0	803.0
Percent of Total	**14.4%**	**0.5%**	**0.2%**	**0.4%**	**16.2%**	**10.4%**

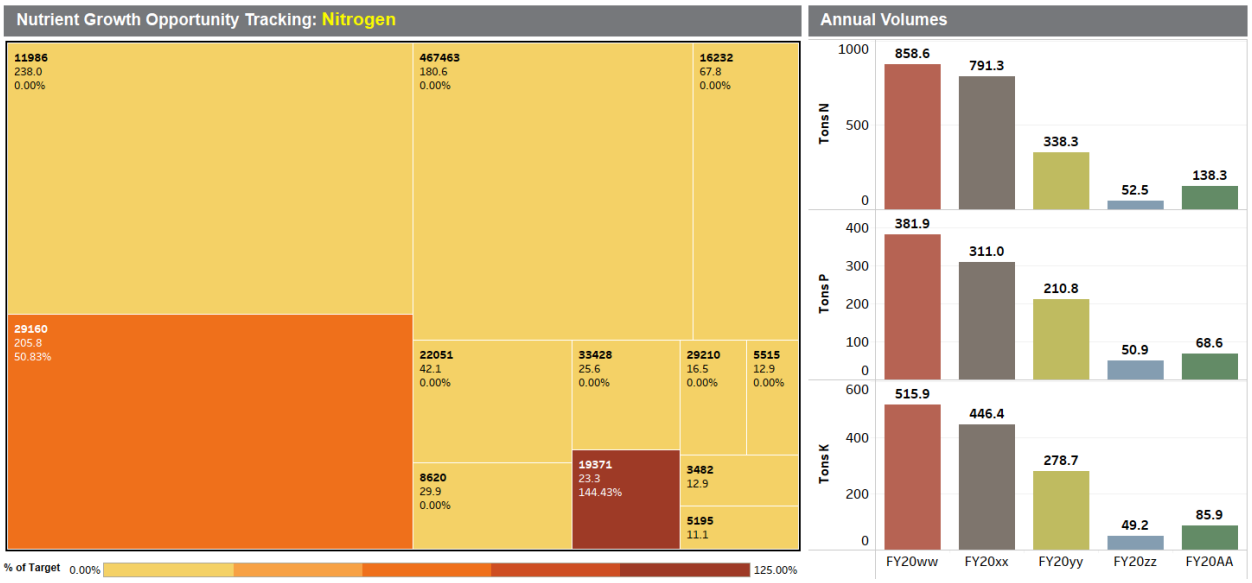
The Nutrient Growth Opportunities dashboard can even identify potential prospects for top salespeople. Look closely at the sales results for "Alan" below. He has had a banner year thus far – his best ever – following disappointing sales of Nitrogen in 20zz (relative to the two prior years). In fact, he also achieved record sales in Phosphorus and Potassium in 20AA as well.



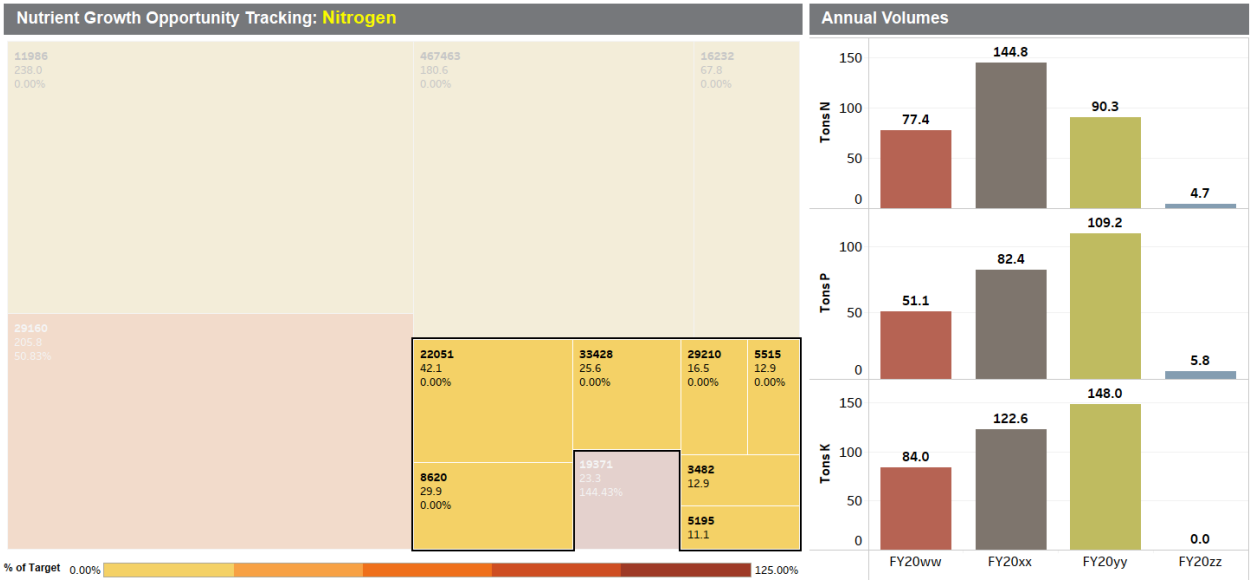
The dashboards on **Page 14** display the results from following the process to identify the "biggest losers" of the customers assigned to Alan. The first tree map highlights 12 customers that have experienced significant declines from 20ww through 20zz in not only Nitrogen tons (-94%), but also in Phosphorus (-87%) and Potassium (-90%). As we discussed earlier, the "bread and butter" customers (meaning medium volume) often provide the most substantial potential recapture of nutrient tons. The second dashboard features the seven remaining customers to target from the lower right corner of the Tree Map (Customer 19371 has already purchased 144% of their target, thus they are excluded). Note that these seven customers combined for decent volumes in all three nutrient categories through 20yy before virtually disappearing in 20zz. Based on the potential indicated by 20yy sales of all nutrients, Alan should delve into the stories behind the reductions experienced with these seven customers.

Tons History: Nitrogen

FY20ww	FY20xx	FY20yy	FY20zz	FY20AA	Target Nutrients	+/- Target	CY Pct of Target	CY Growth Nutrients
858.6	791.3	338.3	52.5	138.3	825	-687	16.76%	86



Key opportunities to pursue yet in 20AA:



Alan's profile is not unlike many top performers in sales. He is responsible for 56 customer accounts – several of which are high volume. In fact, just SEVEN customers represent over 50% of his nutrient sales volumes across all three categories every year. It is reasonable to assume those seven accounts consume a considerable amount of his time, which perhaps leaves some of the medium to below average accounts sometimes slipping through the cracks in his schedule. If these customers don't receive the customer service or attention they desire, it doesn't take much effort from a motivated competitor to persuade them to change their loyalties. When the neighbors see the competitor's delivery or application equipment on Customer "Y's" fields, the coffee shop chatter begins and can lead to further erosion of business in a geography. The Nutrient Growth Opportunities dashboard arms salespeople with a visual tracker of which accounts to focus on.

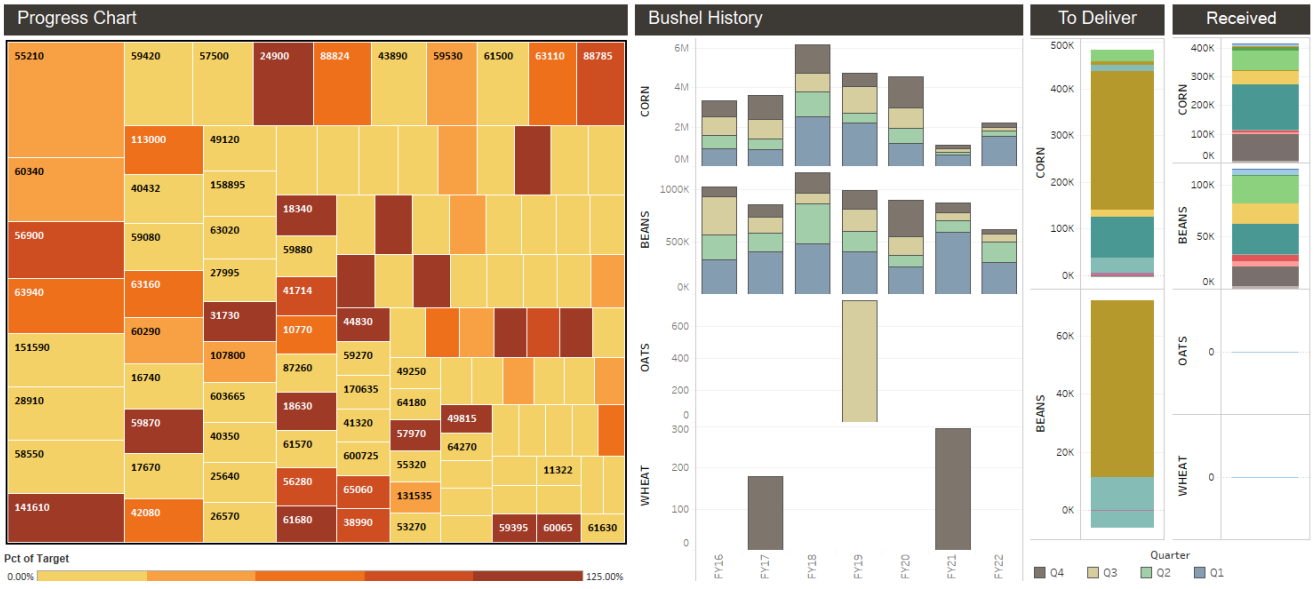
Additional Business Units

Our examples have been focused on an agronomy data set, but that is not the only business unit that our process can assist. **Page 16** illustrates a similar dashboard designed for grain originators to identify customers who have greatly reduced the volume of grain bushels sold to their elevator. In this example, we have four years of settled corn bushels history in addition to bushels settled through the middle of Q3 in the current fiscal year (FY22). To accurately measure the volume of business with a grain customer, we must also consider any bushels they may have either: a) contracted to deliver later this year (or in the next fiscal year), or b) delivered to the elevator but have not yet settled. The snippet below highlights how ALL bushels are accounted for to provide an accurate tally of the grain elevator's total volume of corn for the current year-to-date.

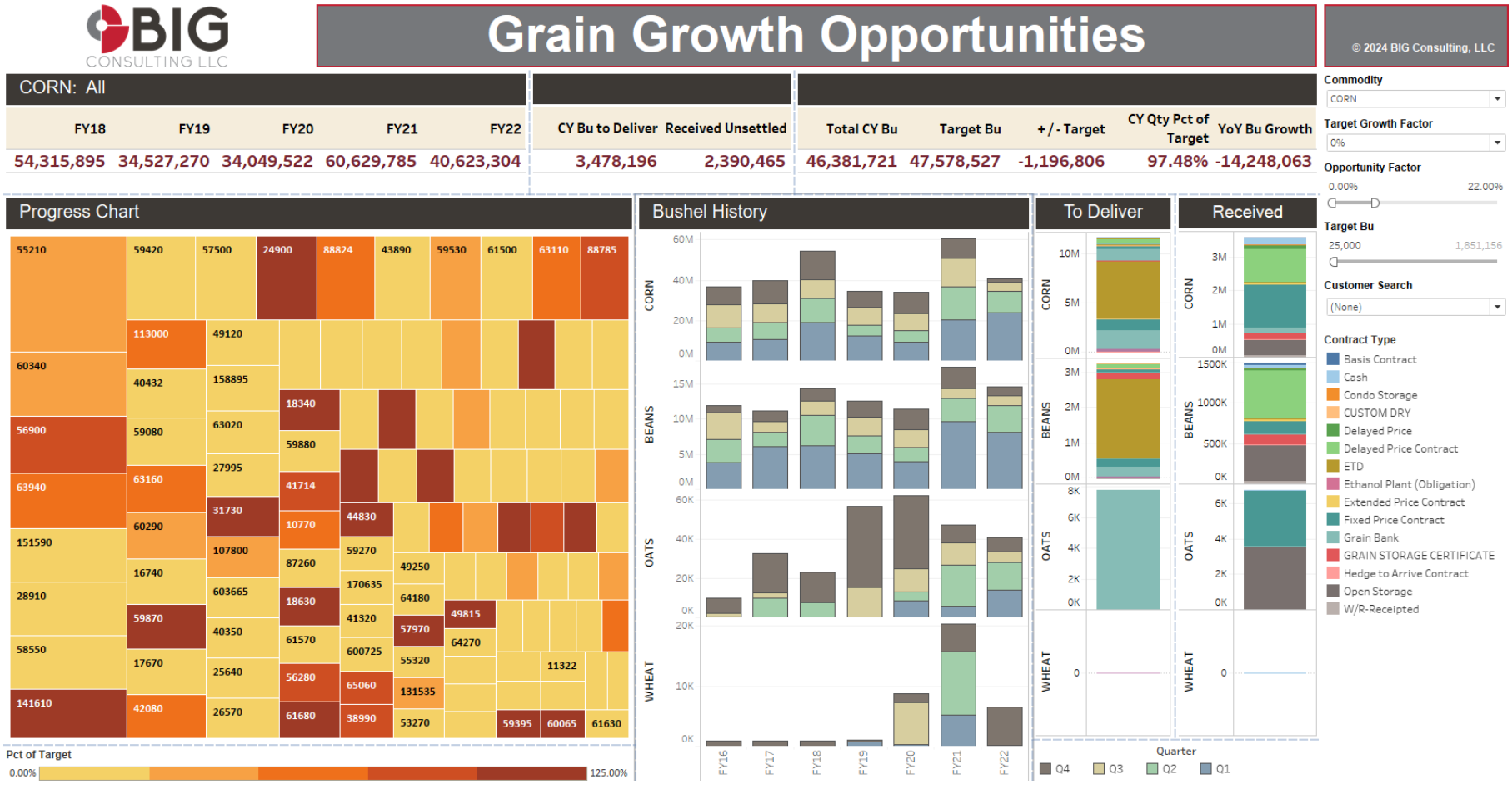
FY22	CY Bu to Deliver	Received Unsettled	Total CY Bu
40,623,304	3,478,196	2,390,465	46,381,721

Setting the Target bushels filter to a minimum of 25,000 results in the example below that identified 115 customers with reduced volumes . The volume of corn bushels settled by these 115 customers was reduced by 83% in FY21 from what had been sold in FY18. By utilizing the process, this elevator had already recaptured more than 1.5MM bushels from these customers compared to the prior year, with three+ months remaining in the fiscal year.

FY18	FY19	FY20	FY21	FY22	CY Bu to Deliver	Received Unsettled	Total CY Bu	Target Bu	+/- Target	CY Qty Pct of Target	YoY Bu Growth
6,174,407	4,739,170	4,545,027	1,065,711	2,227,234	139,990	282,151	2,649,375	5,456,789	-2,807,413	48.55%	1,583,664



Note the color legend for the ***Bushel History*** portion of the dashboard. Each quarter in which bushels were settled is colored uniquely and demonstrates varying year-to-year selling patterns. **Page 17** dives into these details more closely.


BIG CONSULTING LLC
Grain Growth Opportunities
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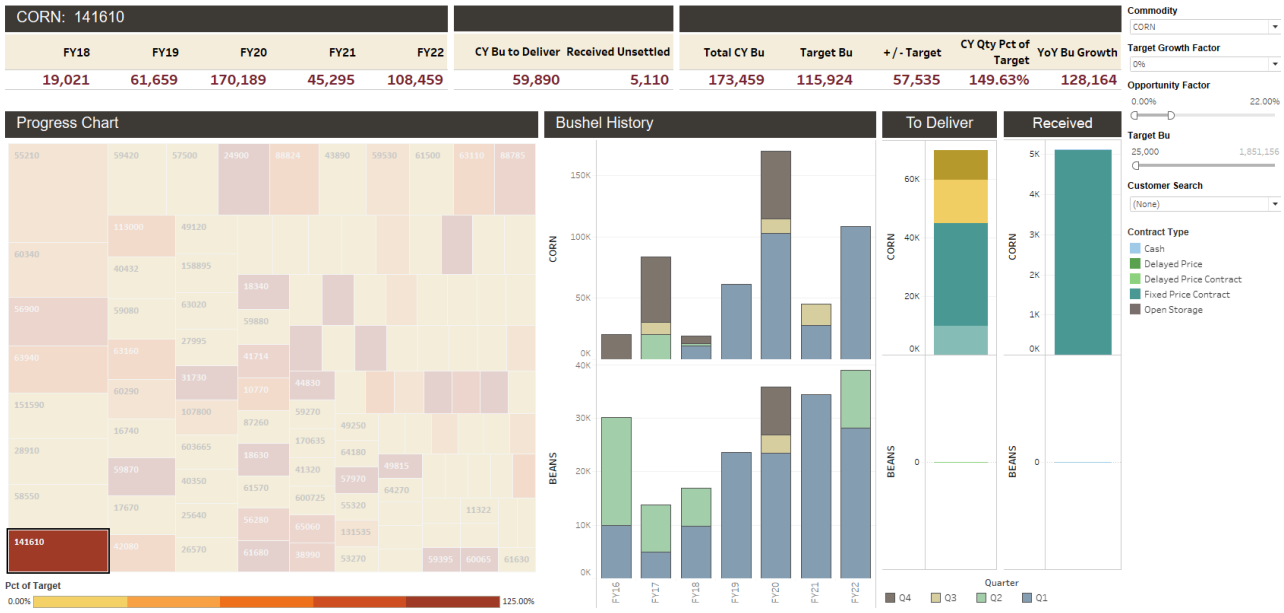
CORN: All
FY18 FY19 FY20 FY21 FY22
54,315,895 34,527,270 34,049,522 60,629,785 40,623,304
CY Bu to Deliver Received Unsettled
3,478,196 2,390,465
Total CY Bu Target Bu +/- Target CY Qty Pct of Target YoY Bu Growth
46,381,721 47,578,527 -1,196,806 97.48% -14,248,063
Commodity
CORN
Target Growth Factor
0%
Opportunity Factor
0.00% 22.00%
Target Bu
25,000 1,851,156
Customer Search
(None)
Contract Type
Basis Contract
Cash
Condo Storage
CUSTOM DRY
Delayed Price
Delayed Price Contract
ETD
Ethanol Plant (Obligation)
Extended Price Contract
Fixed Price Contract
Grain Bank
GRAIN STORAGE CERTIFICATE
Hedge to Arrive Contract
Open Storage
W/R-Receipted
Progress Chart
Pct of Target
0.00% 125.00%
Bushel History
CORN BEANS OATS WHEAT
FY16 FY17 FY18 FY19 FY20 FY21 FY22
To Deliver
Received
Quarter
Q4 Q3 Q2 Q1

The dashboard below highlights the details of Customer 141610. Even though this customer had a surge in volume in FY20, the process correctly identified them as a target to pursue. It is interesting to note that they settled all the current year bushels thus far in Q1 – very different compared to prior years. When they complete the delivery of current year contracted bushels and settle those that have already been delivered, this customer will have sold the largest number of bushels in their history with this elevator – which also easily exceeds the target bushels for the current year.



Notice that the ***To Deliver*** graphic illustrates more bushels (> 60K) than what is listed in the table above (59,980). That is because the gold-colored portion of the bar chart represents a 10K bushel fixed price contract due in October, which is the first month of the next fiscal year (these details appear in a tool tip when the user's mouse is scrolled over the bar chart section), so they are not counted as current year bushels. Also of note is the fact that this customer would not have likely been identified by the grain elevator as a reduced volume target due to their continually increasing settlements of soybean bushels.

Another business unit that can benefit from the Growth Opportunities process is energy. **Page 18** contains an illustration of the dashboard designed to assist energy managers. It follows the same proprietary process as previously discussed for agronomy and grain and is displayed in the same manner for consistency throughout organizations that utilize these dashboards. Note this retailer has maintained fairly consistent volumes over the last five years with propane and gasoline, while diesel fuel has seen moderate increases in the last two years. Data is presented as of early in the second month in the retailer's fiscal year, and for analysis purposes we will focus on propane. A new element is included in the upper portion of the dashboard to account for prepay (or contracted) volumes, which are commonplace with propane businesses.

FY20AA	Prepay Gallons	CY+Prepay Gallons
526,631	3,530,750	4,057,382

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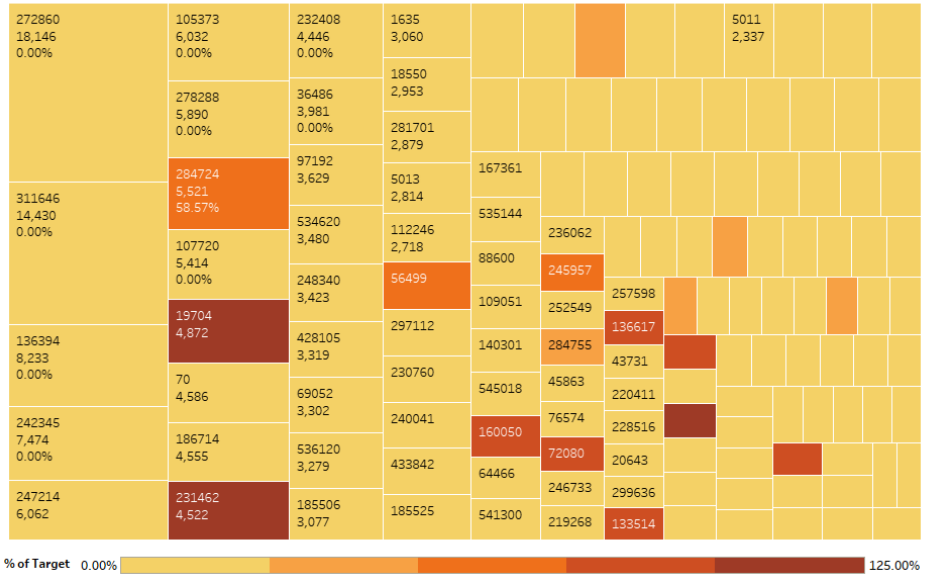
Energy Growth Opportunities

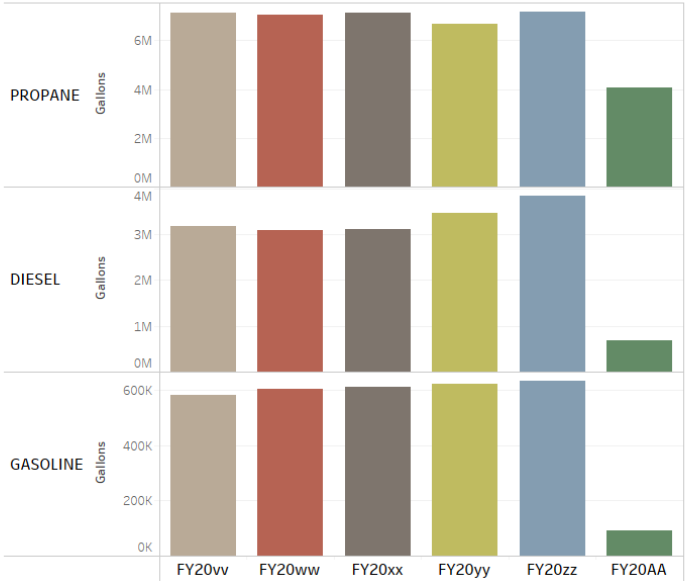
Volume History: PROPANE

FY20vv	FY20ww	FY20xx	FY20yy	FY20zz	FY20AA	Prepay Gallons	CY+Prepay Gall..	Target Gallons	+/- Target	CY% of Target +..	CY Growth
7,143,695	7,063,253	7,151,962	6,674,802	7,190,547	526,631	3,530,750	4,057,382	7,005,770	-2,948,389	57.91%	-3,133,165

Growth Opportunity Tracking: PROPANE



Annual Volumes



Item Group
PROPANE

Opportunity Factor
0.00% 22.00%

Target Growth Factor
0%

Target Gallons
1,000 2,034,447

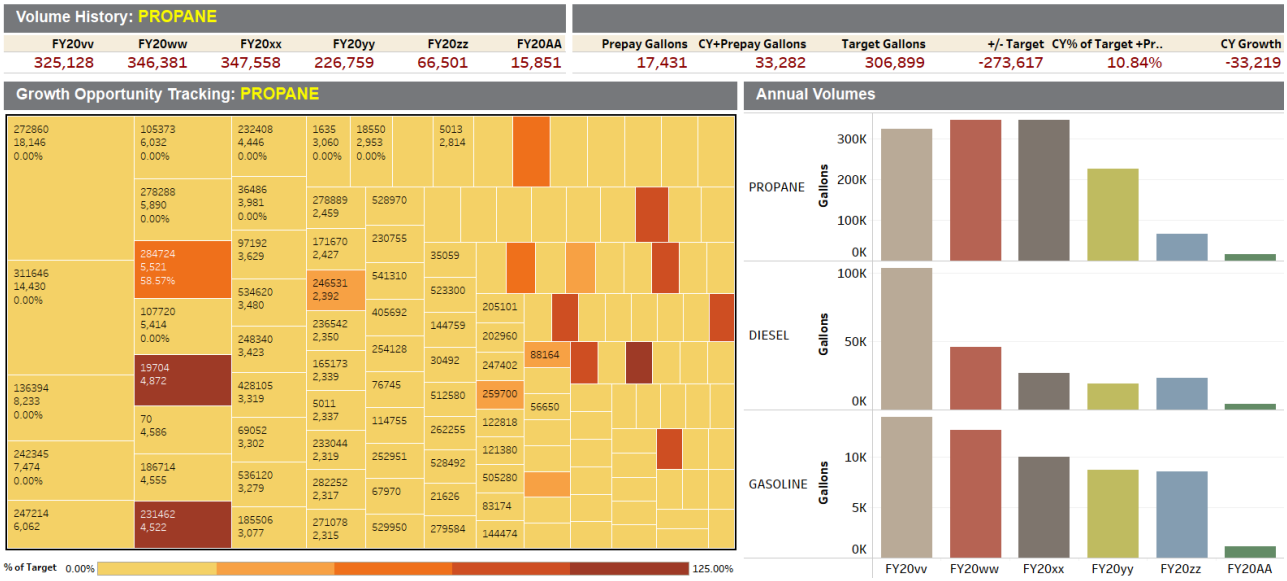
Salesperson
(All)

Name Search
(All)

Customer City
(All)

CY% of Target +Prepays
0.00% 199.03%

Below we see the results of setting the Target Gallons at a minimum of 1000 gallons and then scrolling the mouse over the tree map to identify 135 customers that have significantly reduced their purchase volume of propane. After three relatively stable years, we see that these 135 customers have reduced their propane purchases in FY20zz by 81% from the peak of FY20xx. Interestingly, these same 135 customers have also dramatically decreased their diesel fuel purchases along with modest (yet consistent) declines in gasoline volumes.



Summarizing the data, out of 6,333 total propane customers, this retailer had 1,136 that had target gallons of 1000 or greater. The table below highlights how drastic the volume declines have been over the years and are trending in the same direction to start 20AA.

		Propane Gallons				
	Count	20ww	20xx	20yy	20zz	20AA
1000+ gal. Customers	1136	4,690,988	4,889,928	4,623,865	5,118,411	3,174,432
22% biggest losers	135	346,381	347,558	226,759	66,501	33,282
Percent of Total	**11.9%**	**7.38%**	**7.11%**	**4.90%**	**1.30%**	**1.0%**

The next tier of customers – those with Target Gallons from 500-999.9 – are summarized below to reveal another group of 345 customers who have had an 80% drop from their peak volumes in 20xx.

		Propane Gallons				
	Count	20ww	20xx	20yy	20zz	20AA
500-1000 gal. Customers	2143	1,437,965	1,527,873	1,366,847	1,287,567	628,170
22% biggest losers	345	237,465	278,772	181,676	56,663	31,166
Percent of Total	**16.1%**	**16.51%**	**18.25%**	**13.29%**	**4.40%**	**5.0%**

Combining the two tables above, this retailer has an opportunity to target 480 customers to determine if and how they can regain their propane business as well as their diesel fuel and gasoline volumes. Without the Energy Growth Opportunities dashboard, finding customers with slipping volumes could be a daunting task for large volume retailers.

Conclusion

True Business Intelligence (BI) reporting converts complex and unstructured datasets, such as those we have examined, into real-time, actionable insights that create a competitive advantage for your organization. Using advanced analytics via BI to harness the power of your data will drive profitability, identify and manage risk, reduce costs, and introduce efficiencies that would otherwise remain unrecognized. Growth Opportunities dashboards are specific examples of BI originated tools that companies can utilize in transforming historical data to achieve their operational and strategic goals.

About BIG Consulting

BIG Consulting is a team of business intelligence, data analytics, finance, and agriculture professionals addressing critical needs for agribusiness by transforming data into decisions. Our focus is to empower organizations with real-time, visualized data insights – that are ***relevant*** and ***actionable*** – to fuel innovation and growth, identify efficiencies, and manage risk.

BIGurus.net | 888.230.8810 | info@BIGurus.net

Document Author: Kent J. Schultz