

SUCCESS STORIES - SUMMARY

| Project Name | Client | Brief Description | Services |
|-----------------------------|---------------|---|---|
| Volume, Rate & Mix analysis | Dairy company | Identified factors (volume produced, manufacturing cost of SKUs & the relative volume/mix of SKUs) driving the variance in production cost vs. annual operations plan and YTD benchmarks and quantified their impact on cost and profitability. | Provided a visibility into factors driving variance in production cost vs. annual operations plan and YTD benchmarks. |

VOLUME, RATE & MIX ANALYSIS

ABOUT THE CLIENT

The client is an American dairy company with over a \$1 Billion in annual revenue

SITUATION



- Client was tracking SKU level costing estimates based on production data and P&L each month. However, **they were unable to identify the drivers for variance in cost** vs. annual operations plan and YTD benchmarks.
- Merilytics partnered with the client to **identify the cost drivers and quantify their impact** on profitability

VALUE ADDITION



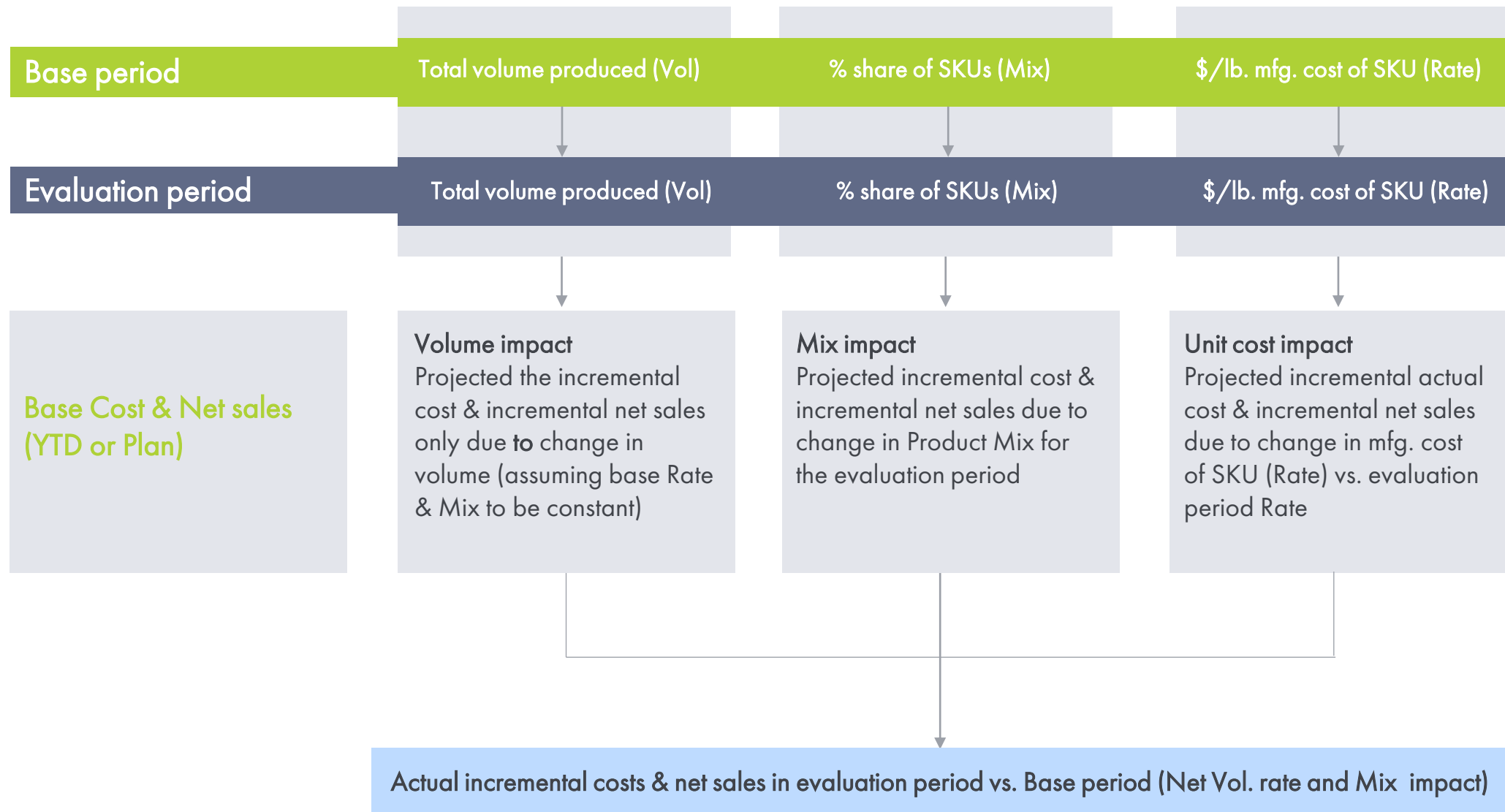
- Changes in **total volume produced, manufacturing cost of SKUs and the relative volume/mix of SKUs produced** were **identified as the key drivers impacting production cost and the overall profits.**
- The **variance in actual cost vs. the base** (annual plan/YTD trend) was attributed to each driver by calculating expected cost for the evaluation period, assuming no changes were made to the other identified cost drivers.
- The analysis was built to **quantify the impact of each cost driver at a SKU, sub-category, category, Plant and region level**
- Impact of cost driver was provided for each of the cost accounts captured in the monthly P&L.** This ensured variable, fixed and sunk costs were treated differently and a precise impact of the drivers on each account was calculated.

IMPACT



- Our analysis enabled the client to identify **situations where an increase in cost was in line with the expectation and a decrease in cost might not have been beneficial.**
- The analysis helped the client to **track operational efficiency at different levels**, by isolating the impact of changes on manufacturing cost.
- Our analysis also **quantified the impact of changes in sales plan on profitability.** This helped the client identify new pricing and marketing opportunities.

► Approach / Methodology For Project Delivery



► Dollar Impact Of Changes In Volume, Unit Costs & Mix

Impact of changes in volume, unit costs and mix can be viewed as per the following user selections:

- Time period for comparison
- Product Category
- Manufacturing facility

| | |
|-------------------|------|
| Base | 2018 |
| Period to compare | 2019 |
| Select period | YTD |

| SKU ID | |
|--------|---|
| F001 | ▲ |
| F002 | |
| F003 | |
| N001 | ▼ |

| Planning... | |
|-------------|---|
| A1 | ▲ |
| A2 | |
| A3 | |
| F1 | ▼ |

| Platform | |
|----------|---|
| A | ▲ |
| B | |
| C | |
| D | ▼ |

Output: Variance in costs in during evaluation period vs. base is attributed to volume, rate and mix impact (Base cost + Vol impact + Rate Impact + Mix Impact = Evaluation period cost)

Account specific impact methodology:
Cost account specific methodology was developed to identify volume, rate and mix impact

| Vol Rate Mix for All SKUs | \$ | | | | |
|----------------------------|----------------------|---------------------|-----------------------|---------------------|----------------------|
| P&L (\$) | 2019 | Volume | Rate | Mix | 2018 |
| DN Price | \$806,540,137 | \$20,876,972 | (\$21,323,278) | \$111,221,567 | \$917,315,398 |
| Sold Volume (Cases) | 98,353,915 | 2,869,376 | - | 0 | 101,223,290 |
| Sold Volume (Lbs) | 488,825,368 | 35,475,895 | - | 0 | 524,301,262 |
| Volume (Cases) | 98,452,211 | 4,805,498 | - | 0 | 103,257,710 |
| Volume (Lbs) | 489,314,166 | 44,966,559 | - | 0 | 534,280,725 |
| Cost Account 1 | \$90,837,683 | \$2,487,988 | \$9,503,092 | \$31,179,951 | \$134,008,715 |
| Cost Account 2 | \$90,973,241 | \$2,085,994 | (\$1,899,248) | \$8,865,415 | \$100,025,402 |
| Cost Account 3 | \$91,790,415 | \$2,136,937 | (\$2,824,990) | \$18,660,701 | \$109,763,063 |
| Cost Account 4 | \$7,565,646 | \$176,133 | (\$270,422) | \$796,586 | \$8,267,943 |
| Cost Account 5 | \$11,612,419 | \$237,369 | \$348,112 | \$1,340,806 | \$13,538,706 |
| Cost Account 6 | \$9,194,386 | \$262,736 | \$2,325,867 | \$2,098,288 | \$13,881,278 |
| Cost Account 7 | \$29,331,459 | \$838,168 | \$643,359 | \$7,220,975 | \$38,033,961 |
| Cost Account 8 | \$73,279,244 | \$1,910,993 | (\$329,444) | \$2,164,983 | \$83,025,776 |
| Total Variable Cost | \$410,584,494 | \$10,136,318 | \$7,496,327 | \$72,327,706 | \$500,544,844 |
| Cost Account 9 | \$44,654,031 | | \$338,080 | (\$1,484) | \$44,990,628 |
| Cost Account 10 | \$59,313,178 | | (\$4,390,183) | \$604,387 | \$55,527,382 |
| Cost Account 11 | \$79,468,569 | | (\$3,003,542) | \$449,092 | \$76,914,120 |
| Total Fixed Cost | \$183,435,778 | \$0 | (\$7,055,644) | \$1,051,996 | \$177,432,129 |
| COGS | \$594,020,271 | \$10,136,318 | \$440,682 | \$73,379,702 | \$677,976,973 |
| Net margin | \$212,519,866 | \$10,740,654 | (\$21,763,961) | \$37,841,865 | \$239,338,425 |
| Net Margin % | 26% | | | | 26% |

► Isolated Impact Of Product Mix, Unit Costs & Net Price

| Vol Rate Mix for All SKUs | \$/Lb | | | | % Cost Share | | | | |
|---------------------------|-------------|----------|----------------|-------------|--------------|--------|----------------|-----------------|---------|
| P&L (\$) | 2019 | Rate | Mix/Absorption | 2018 | 2019 | Rate | Mix/Absorption | DN price change | 2018 |
| DN Price | \$1.65 | (\$0.05) | \$0.15 | \$1.75 | 100.00% | -2.86% | 8.56% | -5.70% | 100.00% |
| Sold Volume (Cases) | 98,353,915 | | | 101,223,290 | | | | | |
| Sold Volume (Lbs) | 488,825,368 | | | 524,301,262 | | | | | |
| Volume (Cases) | 98,452,211 | | | 103,257,710 | | | | | |
| Volume (Lbs) | 489,314,166 | | | 534,280,725 | | | | | |
| Cost Account 1 | \$0.19 | \$0.02 | \$0.05 | \$0.26 | 11.26% | 0.94% | 3.05% | -0.64% | 14.61% |
| Cost Account 2 | \$0.19 | (\$0.00) | \$0.01 | \$0.19 | 11.28% | -0.23% | 0.50% | -0.64% | 10.90% |
| Cost Account 3 | \$0.19 | (\$0.00) | \$0.03 | \$0.21 | 11.38% | -0.24% | 1.47% | -0.65% | 11.97% |
| Cost Account 4 | \$0.02 | (\$0.00) | \$0.00 | \$0.02 | 0.94% | -0.02% | 0.04% | -0.05% | 0.90% |
| Cost Account 5 | \$0.02 | \$0.00 | (\$0.00) | \$0.03 | 1.44% | 0.13% | -0.02% | -0.08% | 1.48% |
| Cost Account 6 | \$0.02 | \$0.00 | \$0.00 | \$0.03 | 1.14% | 0.26% | 0.18% | -0.06% | 1.51% |
| Cost Account 7 | \$0.06 | \$0.00 | \$0.01 | \$0.07 | 3.64% | 0.15% | 0.57% | -0.21% | 4.15% |
| Cost Account 8 | \$0.16 | (\$0.00) | (\$0.00) | \$0.16 | 9.83% | -0.00% | -0.22% | -0.56% | 9.05% |
| Total Variable Cost | \$0.84 | \$0.02 | \$0.10 | \$0.95 | 50.91% | 0.98% | 5.58% | -2.90% | 54.57% |
| Cost Account 9 | \$0.09 | \$0.00 | (\$0.01) | \$0.09 | 5.54% | 0.03% | -0.35% | -0.32% | 4.90% |
| Cost Account 10 | \$0.12 | (\$0.01) | (\$0.01) | \$0.11 | 7.35% | -0.43% | -0.45% | -0.42% | 6.05% |
| Cost Account 11 | \$0.16 | (\$0.01) | (\$0.01) | \$0.15 | 9.85% | -0.30% | -0.61% | -0.56% | 8.38% |
| Total Fixed Cost | \$0.38 | (\$0.01) | (\$0.02) | \$0.34 | 22.74% | -0.70% | -1.41% | -1.30% | 19.34% |
| COGS | \$1.22 | \$0.00 | \$0.07 | \$1.29 | 73.65% | 0.28% | 4.17% | -4.19% | 73.91% |
| Net margin | \$0.43 | (\$0.05) | \$0.08 | \$0.46 | | | | | |
| Net Margin % | 26% | | | 26% | | | | | |

ILLUSTRATIVE

Output:
Unit cost, Mix and Net price impact is tracked at a cost per lbs. & as a percentage of net price

► Learnings

ILLUSTRATIVE

- Allocating Fixed costs and variable costs impact to factors that drive the same.
- Types of Mix impacts – such as product mix impact, ingredient mix impact
- New tools/techniques learnt
- We use Excel Macro to automatically generate separate outputs tabs for different inputs selections based on time periods (months, YTD, quarterly, half-yearly, FY) and volume categories (previous year, current and AOP (Annual operations plan)).