Blue Detergent

Four Year Simulation

Management Report

SKIB351 Home Assignment

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Introduction

In this report I discuss the strategy, results, and analysis of a four-year simulation of Blue Detergent company. Currently, Blue Detergent is perceived as a reliable yet basic product and it occupies the lowest percentage of the detergent market share. It is our goal at Kelsey-White to maximize Blue's profitability and improve its market standing, and the K-W Vision system has given us the unique ability to make informed decisions about our investments. By analyzing data on our company and its competitors, we are able to better understand Blue's position in the market and observe trends which help us make projections for the future. In this report, I will explain how I used the data in K-W Vision to make decisions for each year, the results of my decisions, and how I adjusted my strategy based on those results. The simulation resulted in successes and failures for Blue, both of which can be learned from for real-life decision making (Harvard Business Publishing, 2022).

Round One: Initial Strategy

To form my initial strategy, I needed to better understand the consumers who prefer Blue detergent. Looking at the Market Share graph and adjusting the filters, I determined the segments of the market that comprise Blue's largest market share (Figure 1.1). This consists of consumers in the following categories:

- Income $39,999 and under
- Household size 3+
- In Southeast, Central, and West regions of the US
- Under age 45

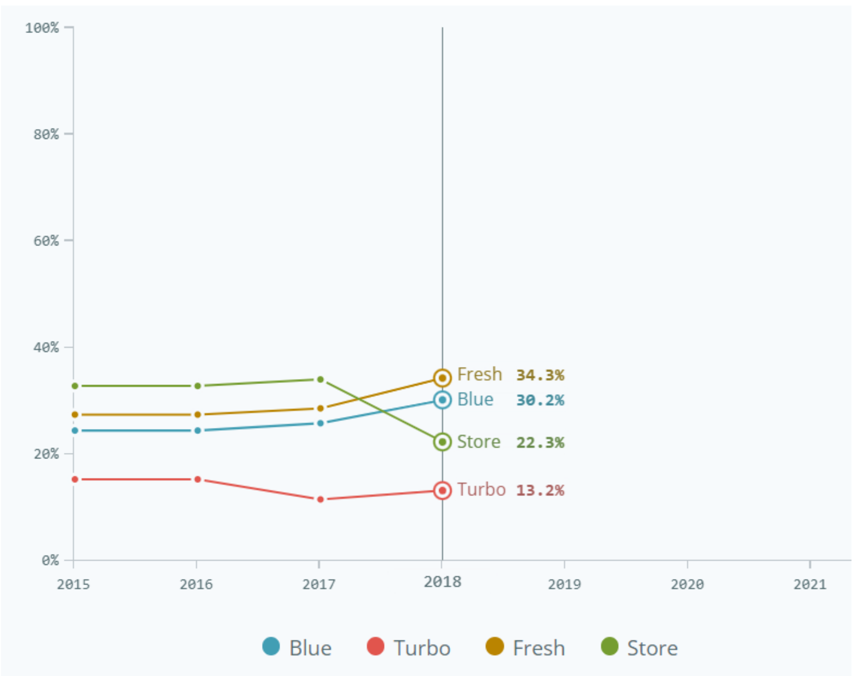
Blue claims 30.2% of the market with these demographics, only second to Fresh. I selected these categories as the target market segments in order to maximize on the consumers who are already drawn to Blue (figure 1.2).

To determine the budget amounts to be allocated to different trade channels, I looked at the Trade Channel Demand graph (figure 1.3) with the filters applied for the target segments above. I calculated the percentage of the total demand for each trade channel and allocated each channel an equivalent percentage of the budget. I followed the same process for allocating media spending. I calculated the percentage of the total consumed for each media outlet and allocated each outlet the same percentage of the budget (figure 1.4). My strategy is to mirror Blue's spending on the observable data in order to cater to the behavior of the target market. This way, we are spending efficiently and reaching our primary customers exactly where they are. We will spend 100% of the available budget in these categories since we want to maximize the exposure of our brand to drive demand upwards.

Next, pods are the formulation with highest demand, so we will be producing pods. Producing pods will increase variable costs, but we do not expect this to be a problem since the financial statement shows profits nearly doubling after increases in variable costs (figure 1.5). Since pods are Turbo's most popular product and Turbo enjoys the largest market share overall, selling pods may help Blue win a portion of Turbo's market. Odor elimination is the product feature in highest demand, so we will focus on that.

In the prior four years, production has equaled demand exactly. We expect our targeted spending strategy to trade channels and media outlets to boost the demand for Blue, so we need to choose a production amount that accommodates for increased demand. If production is much higher than demand, we will have costly surplus inventory. If demand is much higher than production, we will miss out on sales opportunities and lose potential customers. We used the forecast demand tool to observe the probability distribution of forecasted demand, and chose a production value of 36 million units, which is above the mean forecasted demand (figure 1.6). We expect this to accommodate for the anticipated increase in demand, while still being conservative enough to minimize spending.

Finally, we chose $7 as the unit price. In the data, we observed the Store brand experienced a drastic decrease in profitability after increasing their price in 2018. Since Blue occupies a similar segment of the market (lower income and larger households), an affordable price is likely a large driver of demand for both brands. Considering this, we are keeping Blue's unit price the same this year (figure 1.7).



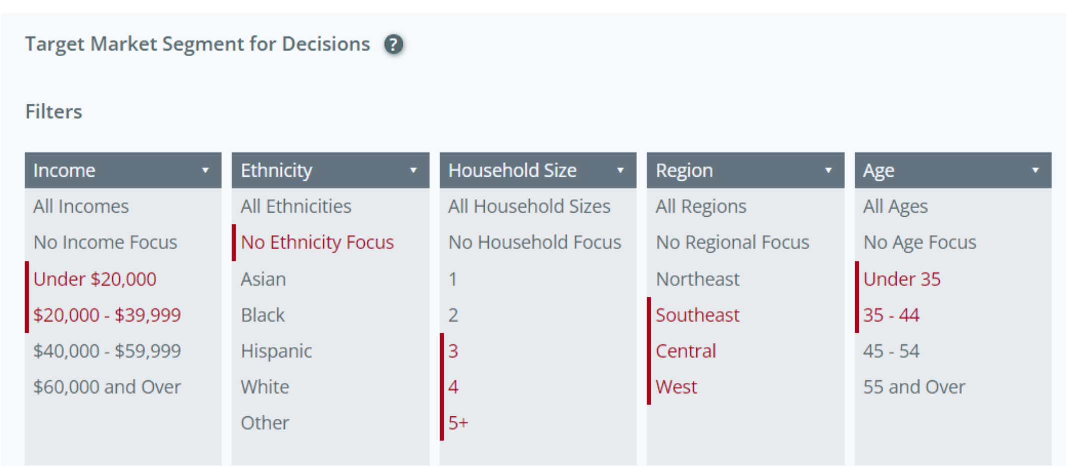


Figure 1.1 (top) and Figure 1.2 (bottom)

The red items in 1.2 are the selected target market segments. The graph shows the market share of each brand for these market segments. These segments comprise Blue's largest share of the market.

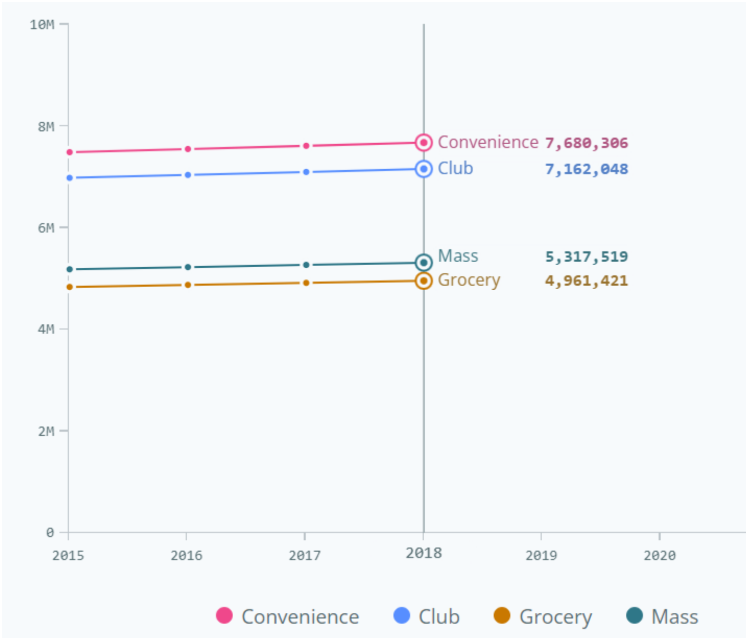


Figure 1.3

Graph of trade channel demand and table showing how I calculated the percentage of the budget to allocate each

Trade Channel	Amount Demanded ($)	Percent of Total
Convenience	7,680,306	31%
Club	7,162,048	29%
Mass	5,317,519	20%
Grocery	4,961,421	20%
Total	25,121,294	100%

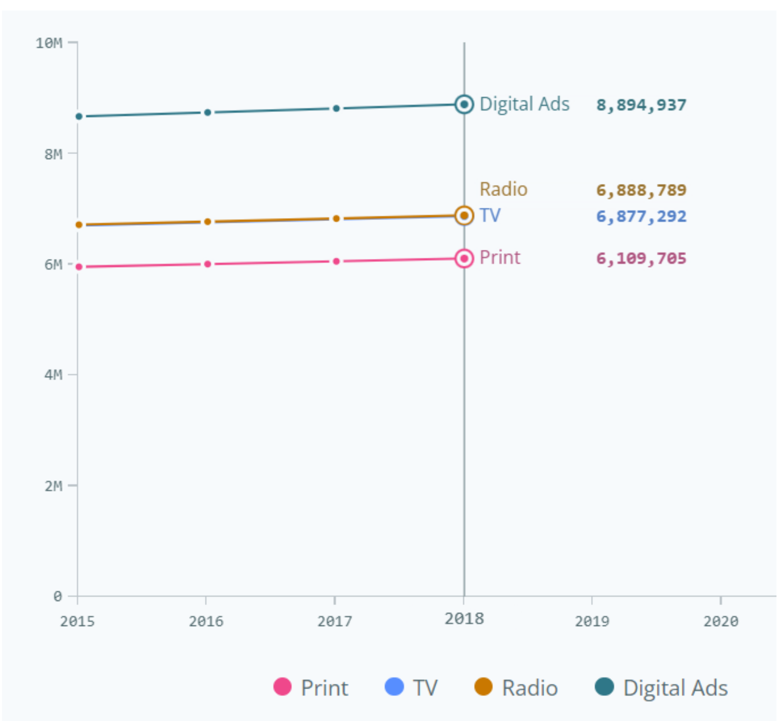


Figure 1.4

Graph of media consumption and table showing how I calculated the percentage of the budget to allocate each

Media Type	Amount Consumed ($)	Percent of Total
Digital Ads	8,894,937	31%
Radio	6,888,789	24%
TV	6,877,292	24%
Print	6,109,705	21%
Total	28,770,723	100%

Income Statement (in $US)

	2015	2016	2017	2018
Revenue	$178.2M	$179.7M	$196.7M	$225.3M
Costs				
Variable Costs	$53.5M	$53.9M	$59.0M	$67.6M
Fixed Costs	$87.0M	$87.0M	$87.0M	$87.0M
Other Costs	$30.0M	$29.7M	$30.0M	$32.9M
Total Costs	$170.5M	$170.6M	$176.0M	$187.5M
Operating Profit	$7.8M	$9.1M	$20.7M	$37.8M
Cumulative Operating Profit	**$7.8M**	**$16.9M**	**$37.6M**	**$75.4M**

Figure 1.5

Income statement showing profit increase as variable costs increase

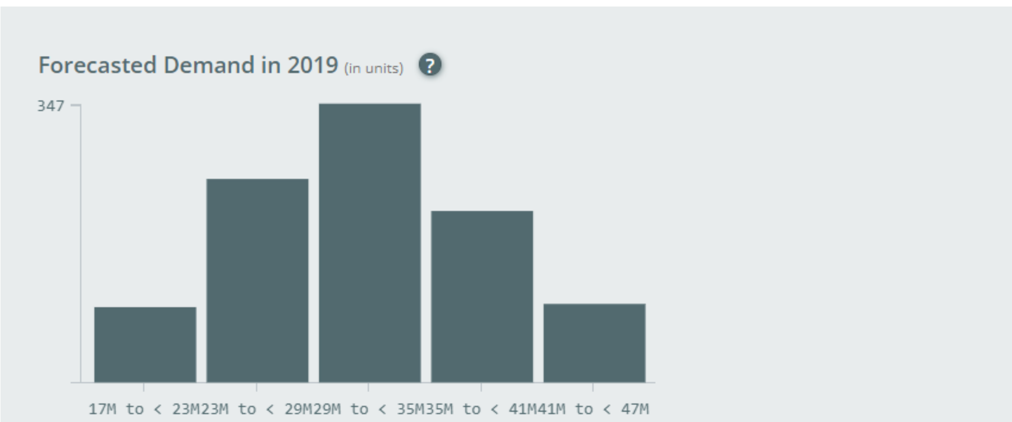
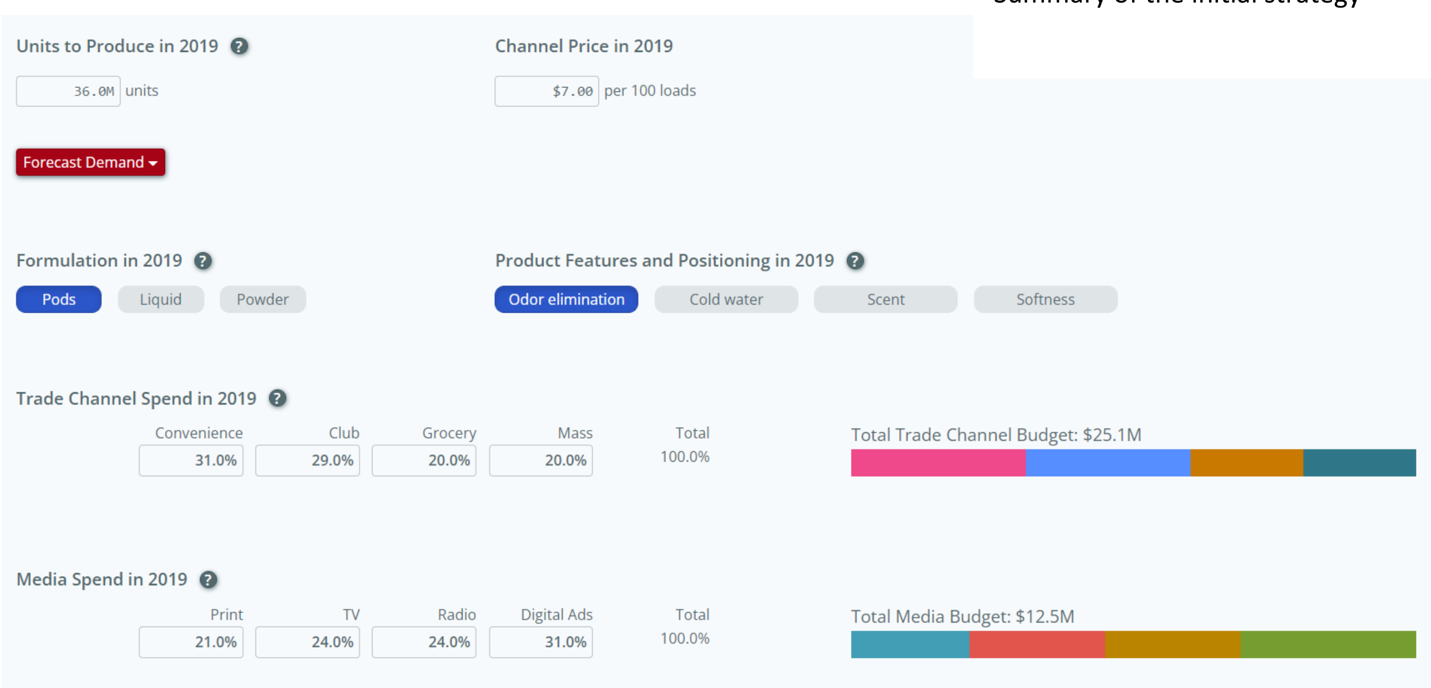


Figure 1.6 (left)

Probability distribution of forecasted demand

Figure 1.7 (below)

Summary of the initial strategy



Round Two

In 2019 we experienced a small increase in profitability. We were successful relative to other brands who all experienced a sharp decrease in revenue and profit, with the Store brand falling into losses (figure 2.1). Our overall market share increased from 11% to 12.7%. Our targeted approach appeared to be successful as we achieved the largest market share in those market segments (35.1%) (figure 2.2). Within those segments our brand demand increased from 12.5% to 17.6% while demand for all other brands fell (figure 2.3).

We will not change our trade channel and media spending percentages or our target market segments since these appeared to be advantageous. We made a major miscalculation in the production, however, with demand for our product exceeding production by 12,122,531 units: 1/3 of our total production (figure 2.4). We need to increase our production to meet the demand, so we are increasing the units to 53M, as we expect demand to yet again increase. This should also increase our sales and profitability. We will continue producing pods and focusing on odor elimination as these are in highest demand. We observed in the social media feedback a high volume of price complaints, and observed a high demand for lower price points, so we will experiment with lowering our unit price from $7 to $6.50.

Figure 2.1

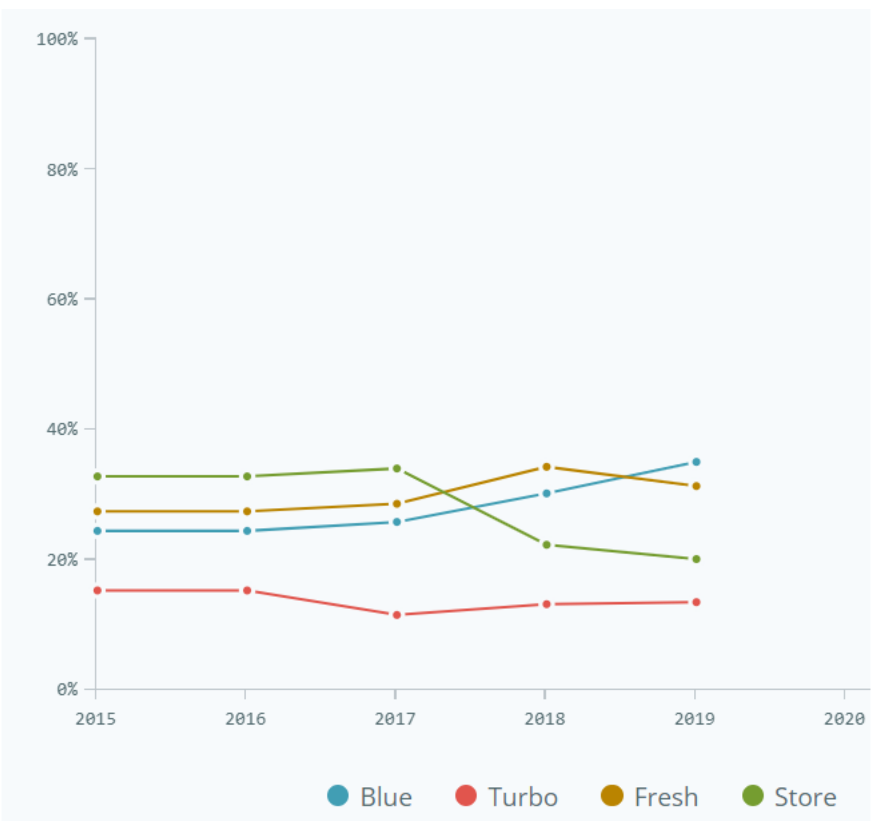


Figure 2.2

Graph showing Blue's increasing market share in target segments

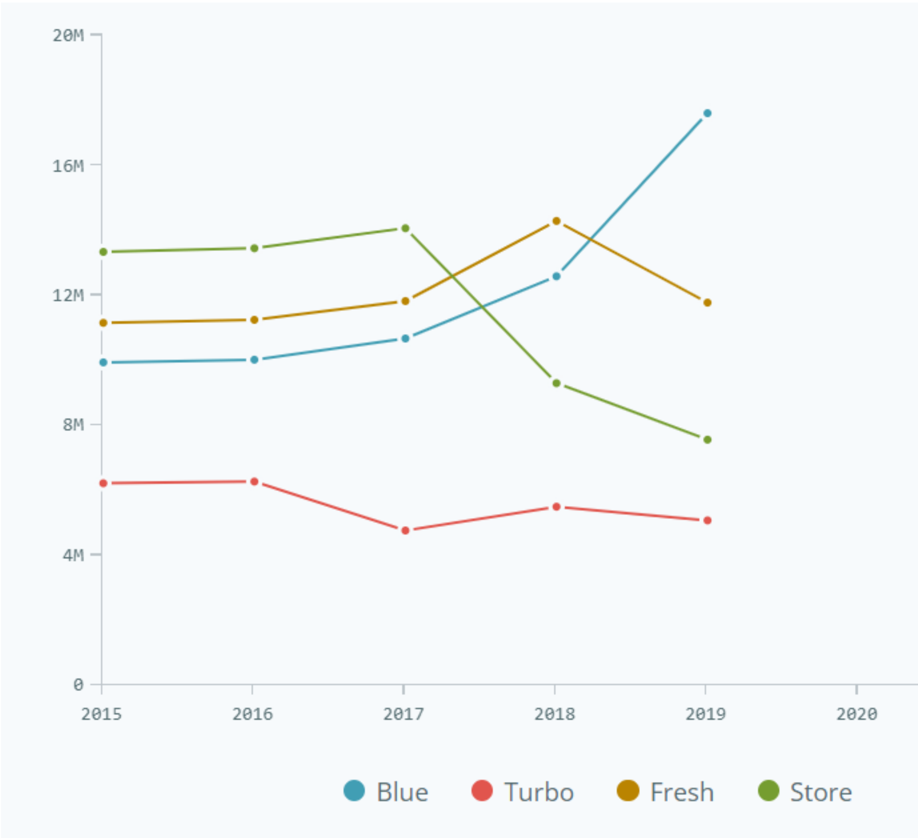


Figure 2.3

Graph showing Blue's increasing demand within target segments

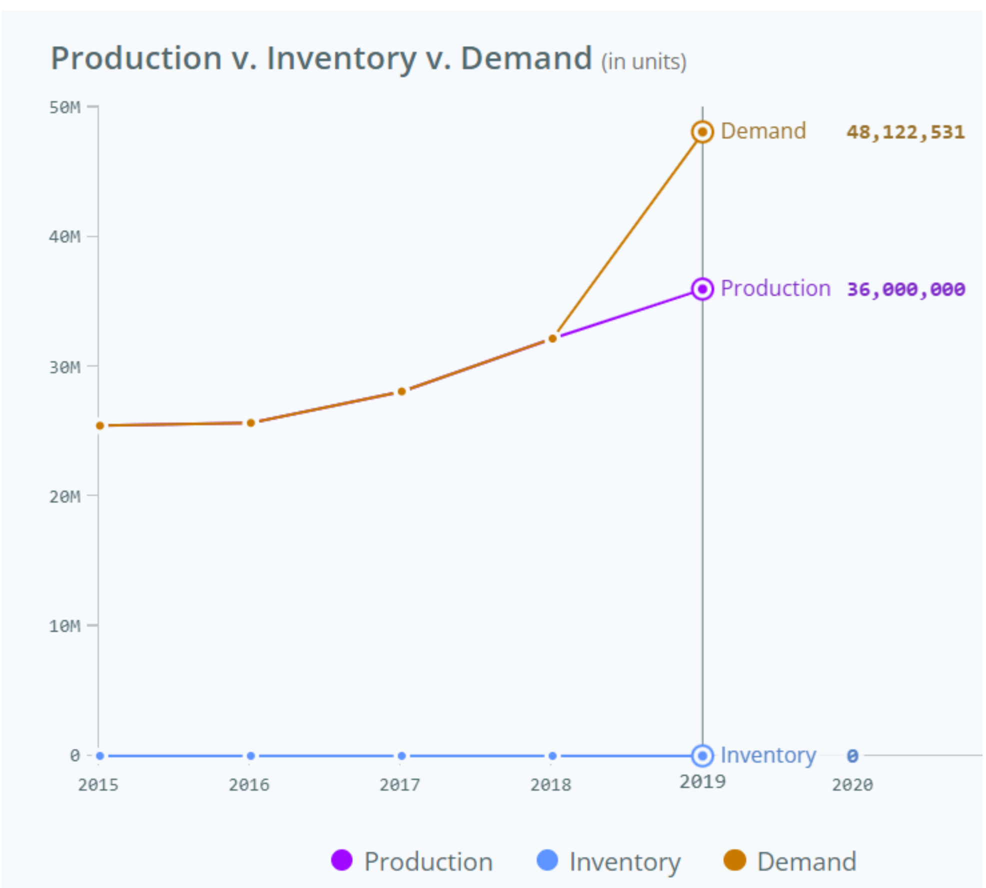


Figure 2.4

Demand exceeding production

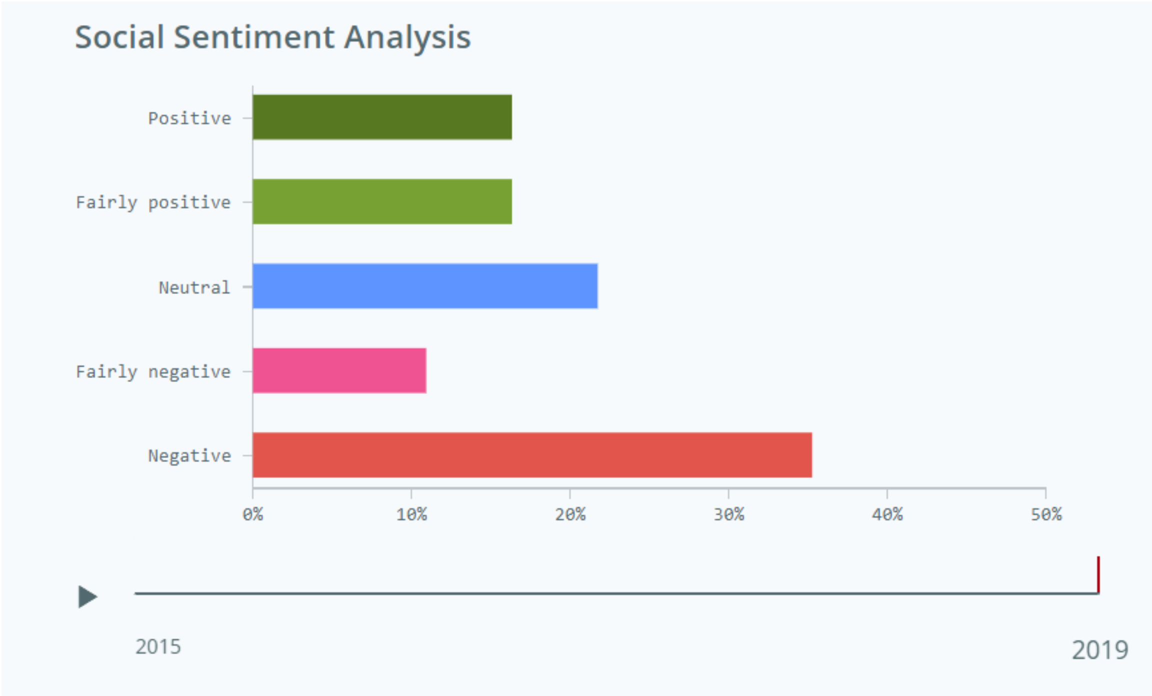


Figure 2.5

Negative social sentiment

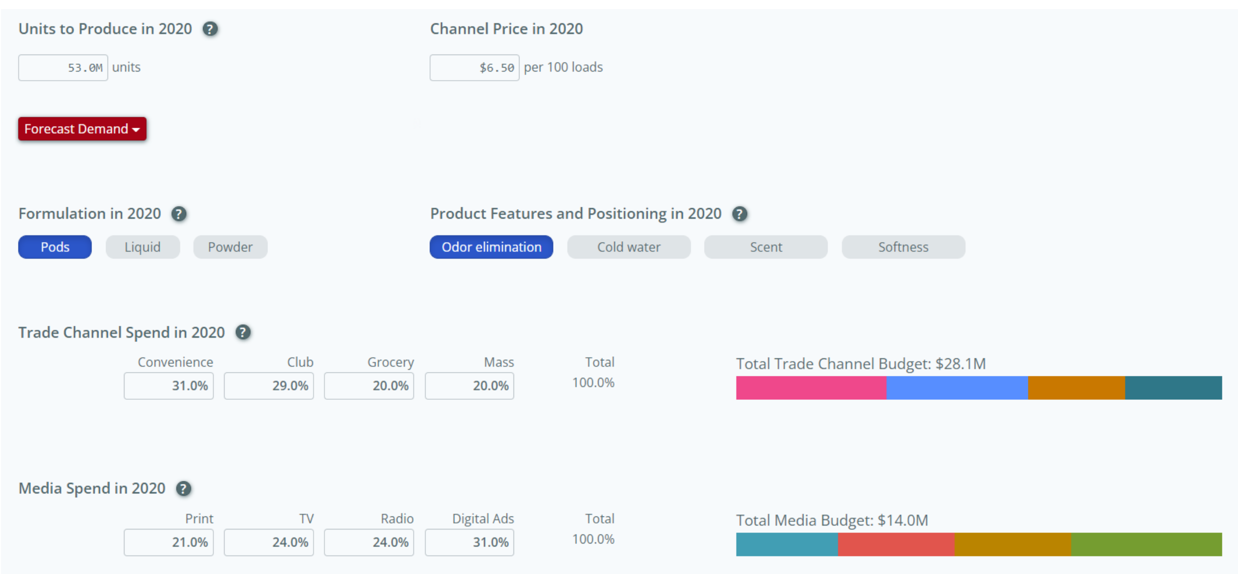


Figure 2.6

Summary of Round Two Strategy

Round Three

2020 saw Blue's profitability nearly double from 40.5M to 75.8M (figure 3.1). We attribute this to the success of our targeted spending approach and our drastic increase in production to meet the increased demand. Our production slightly exceeded demand by 3M (figure 3.2). We saw a modest increase in demand this year, so we will be more conservative for 2021 and set the production to 55M units. We will continue to target these specific market segments since we have managed to grow our market share within them to 44.4% (figure 3.3). Our spending percentages continue to reflect the observed media outlet consumption and trade channel demand of our target segments. Social media sentiment has drastically improved, with positive feedback up from 16% to 38% and negative feedback down from 35% to 16% (figure 3.4). We attribute this to increased customer satisfaction with our lower price. Finally, we will once again experiment with decreasing our unit price, this time from $6.50 to $6.25 to test if we can find more profitability by meeting the demand for a lower price point in our target market.

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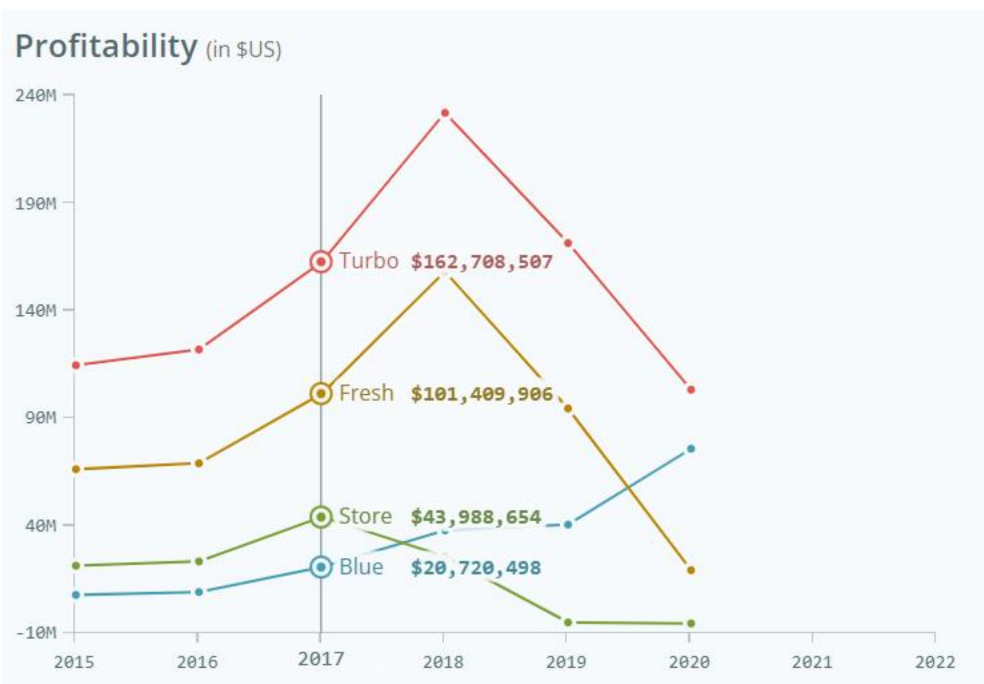


Figure 3.1

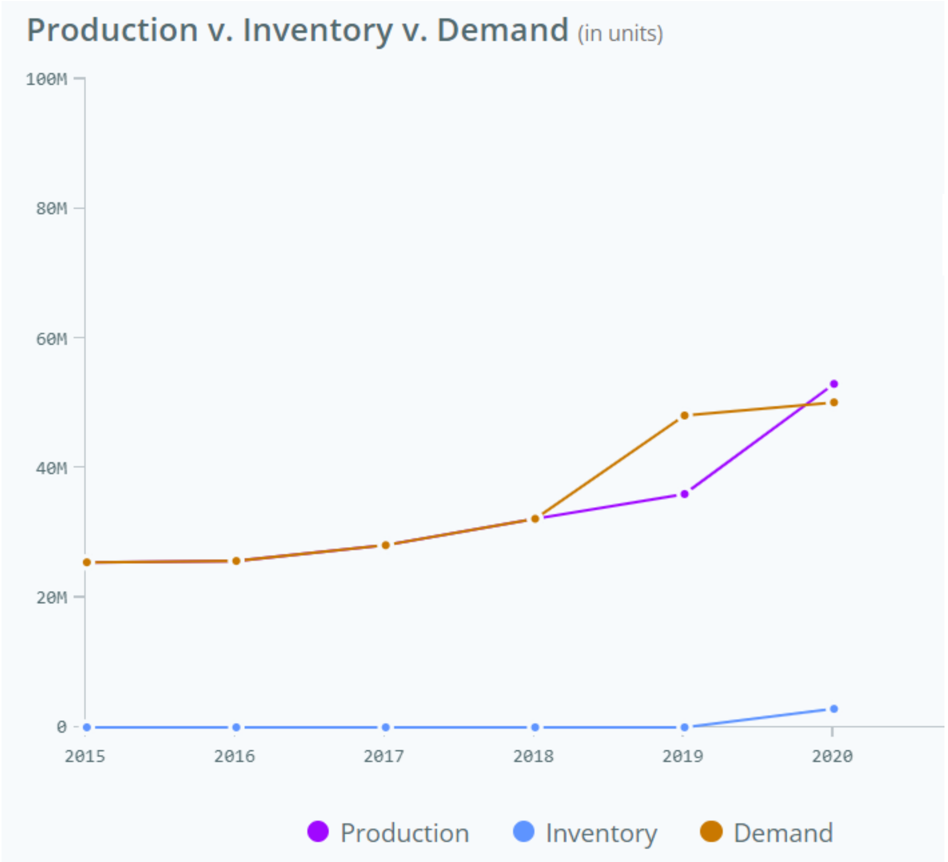


Figure 3.2

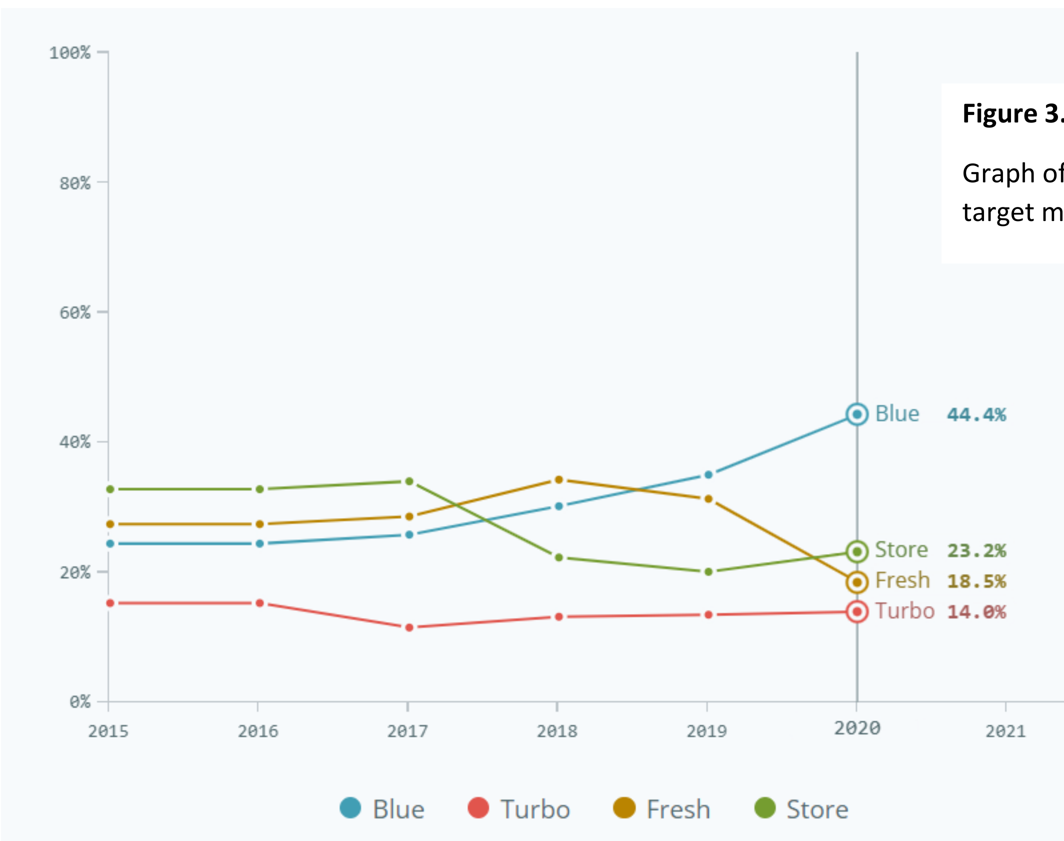


Figure 3.3

Graph of the market share of the target market segments

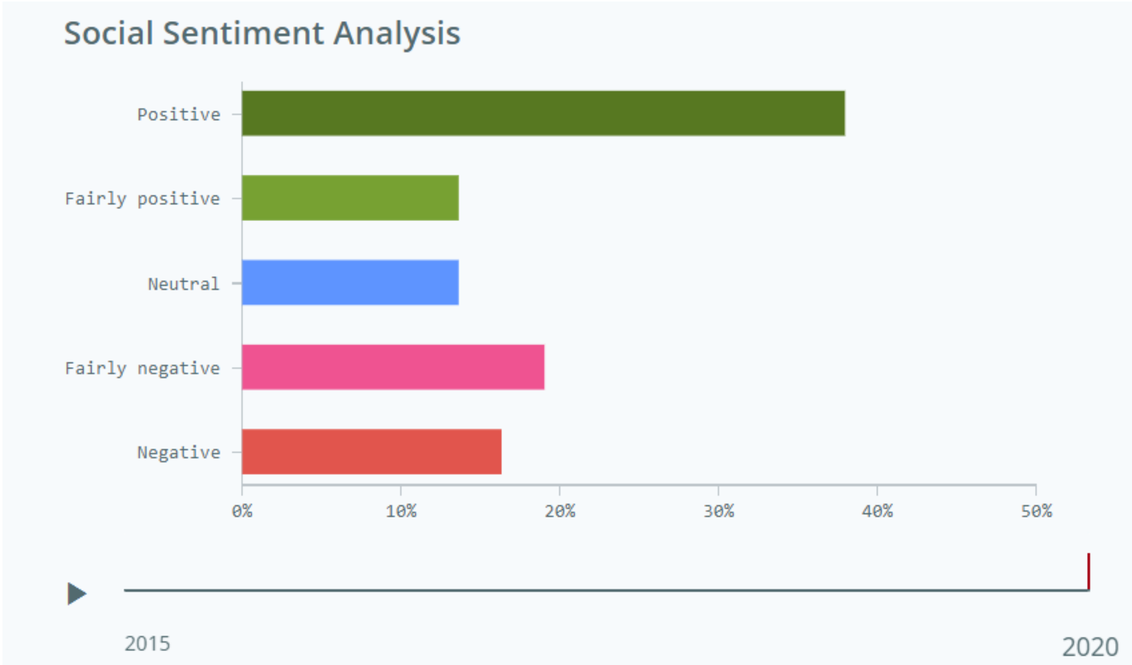


Figure 3.4

Increased positive sentiment

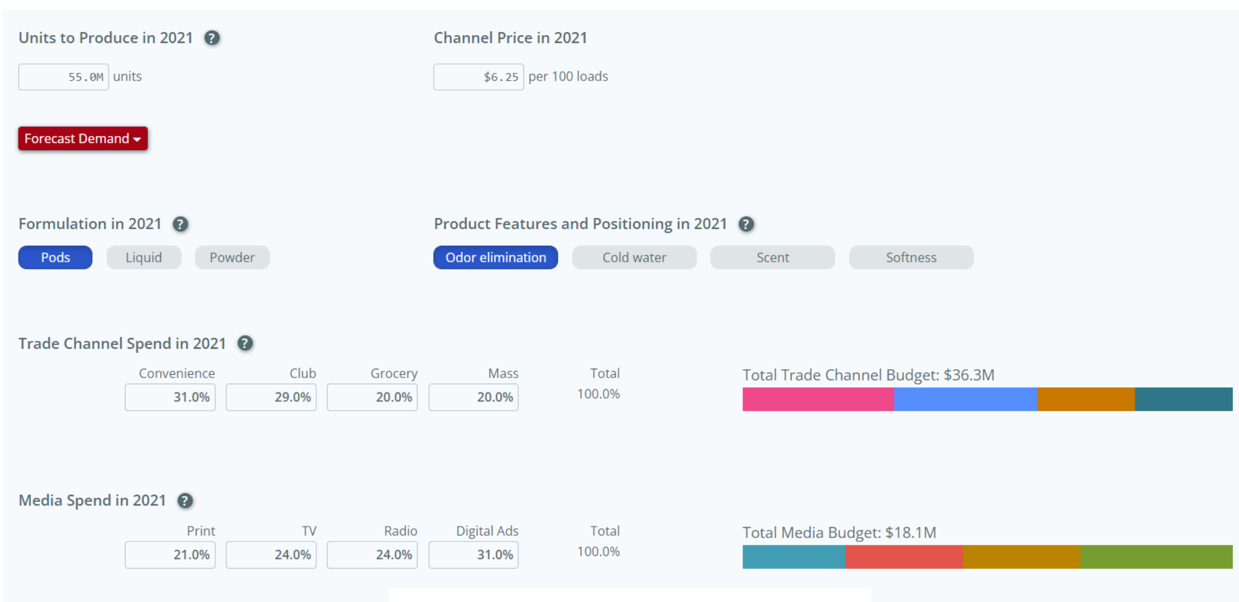


Figure 3.5

Summary of Round Three strategy

Round Four

In 2021 our profitability decreased from 75.8M to 40.4M, yet we have become the market leader by profitability (figure 4.1). Furthermore, we have the lowest revenue of any brand, but the highest profit (figure 4.2). This shows we are spending our money efficiently relative to other brands. Although we dropped our unit price, the Store brand dropped theirs even lower to $4.50 which likely resulted in their absorbing a portion of our market (figure 4.3). This likely caused the decrease in demand (figure 4.4) and market share we observed this year (figure 4.5). Store brand's market share increased from 23% to 32%. In order to compete for their market share and increase the demand for Blue, we will need to lower our price. We will set our price at $5.25/unit. This isn't as low as the Store brand's price because we expect to have an edge due to the recognized quality and reliability of our brand, and our offering of more modern products (pods). We are setting our production to 48M units, which takes into consideration our additional inventory of 10M. Our trade channel and media spending percentages will remain the same as will our target market segments since we still hold the greatest market share within them.

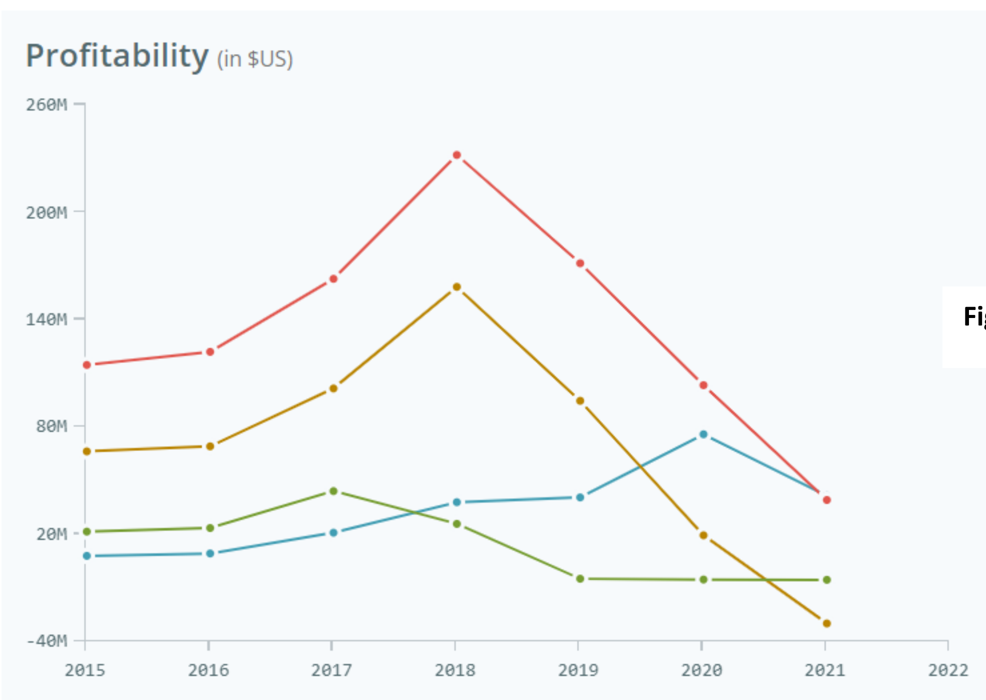


Figure 4.1

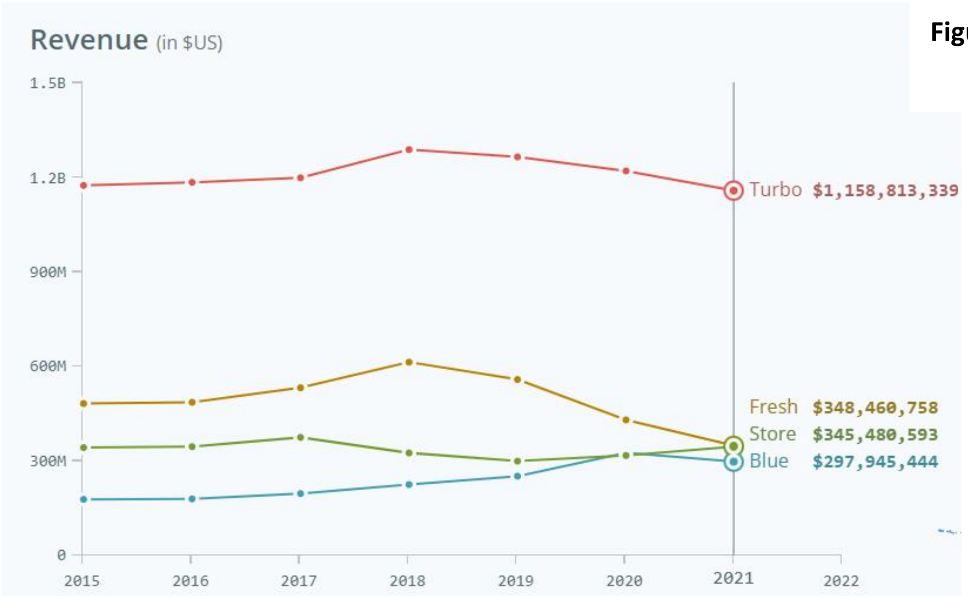


Figure 4.2

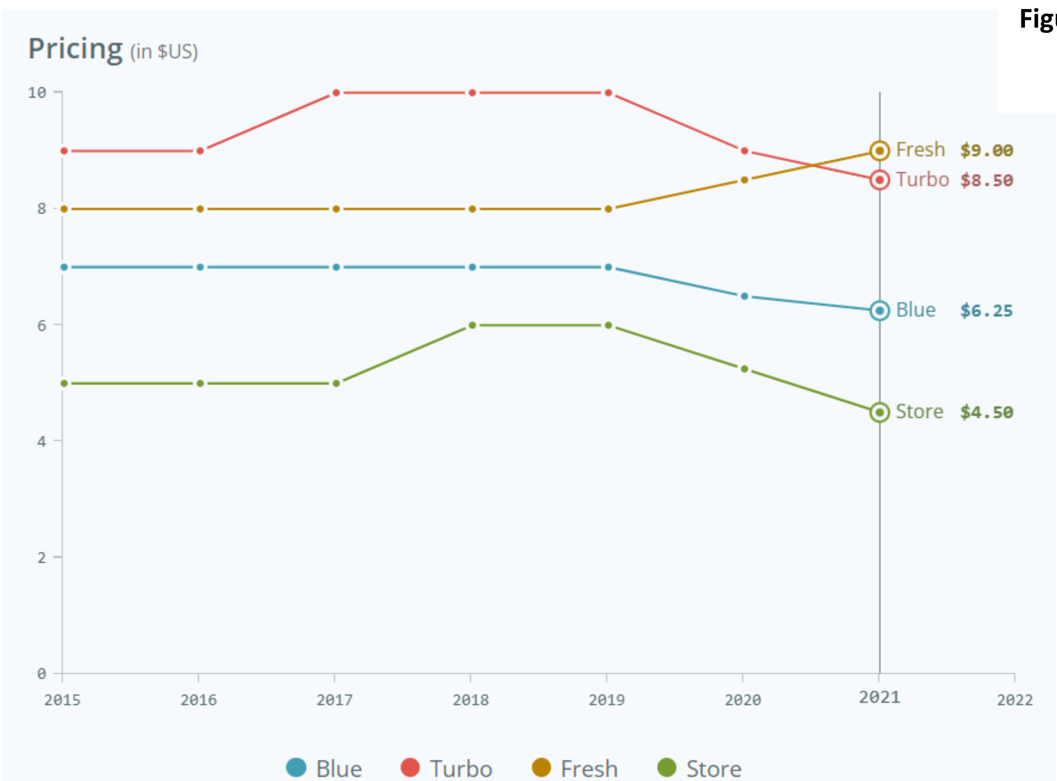


Figure 4.3

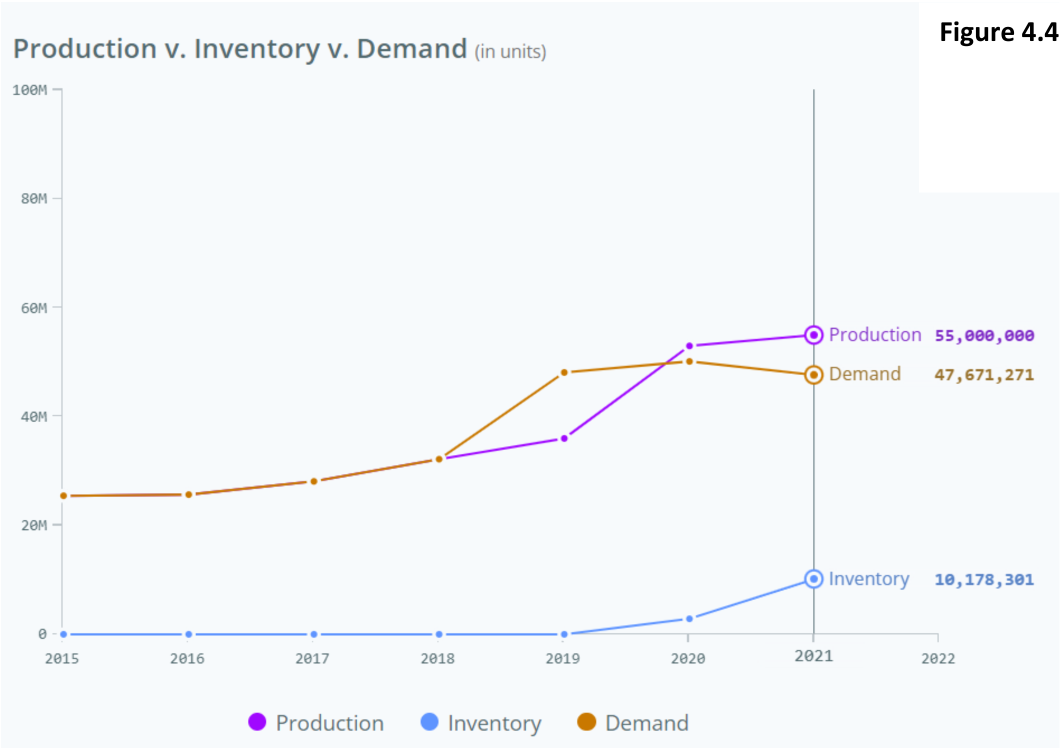


Figure 4.4

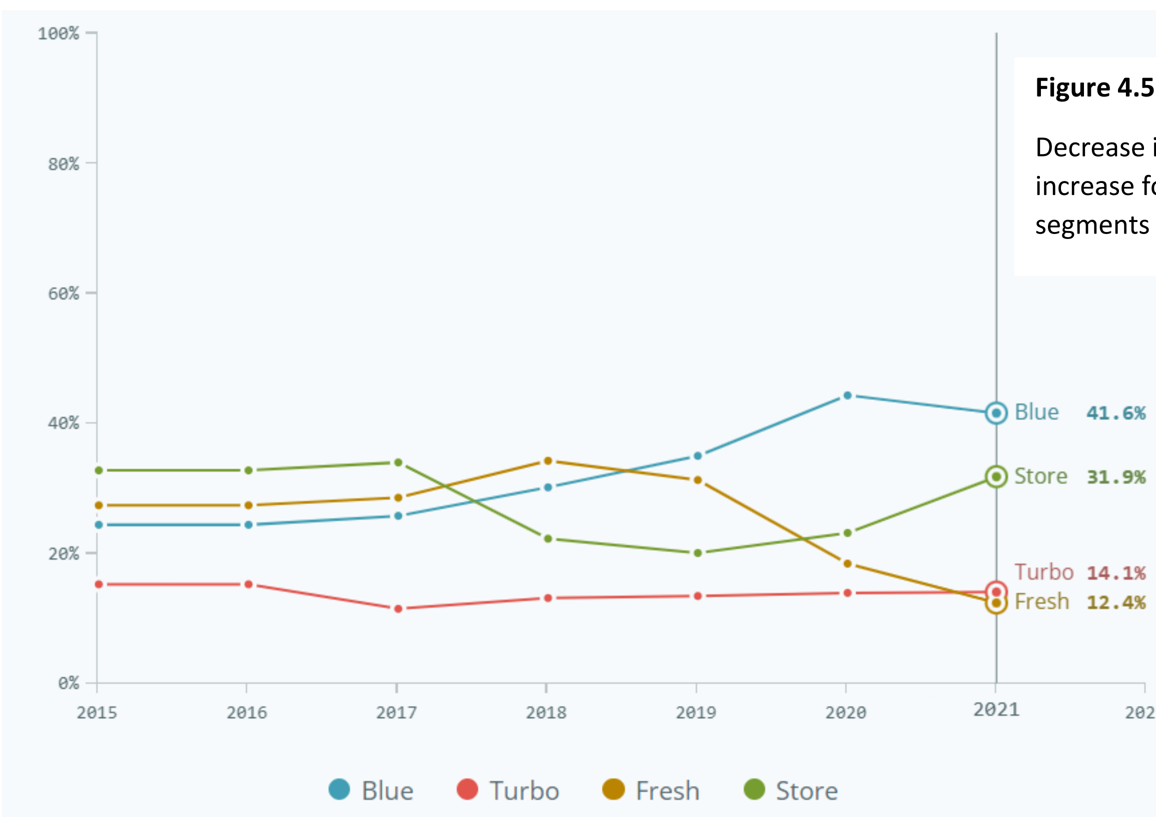


Figure 4.5

Decrease in market share for Blue, increase for Store brand in target segments

Final Results

At the end of the simulation, we managed to increase our total market share to 20% (figure 5.1). Blue no longer holds the lowest market share. Instead, Fresh does with 12.7% of the total. Our profitability decreased but not as sharply as last year, and we are still the leaders in profitability (figure 5.2). Our total revenue increased slightly and we are the only brand that managed to accomplish this (figure 5.3). We significantly underestimated how much lowering the price to $5.25 would drive up demand, and as a result our production amount was too low even after factoring in the 10,178,301 units of additional inventory (figure 5.4). As a result of our too-low production, we missed out on the sale of 11,588,197 units which would have increased both our revenue and profit. The demand for Blue in our target categories significantly increased while all other brand demands decreased (figure 5.5). It appears that we were able to reclaim a large portion of the market we lost last year to the Store brand by lowering our price. Finally, in our target segments we increased our market share to 53%, over half (figure 5.6).

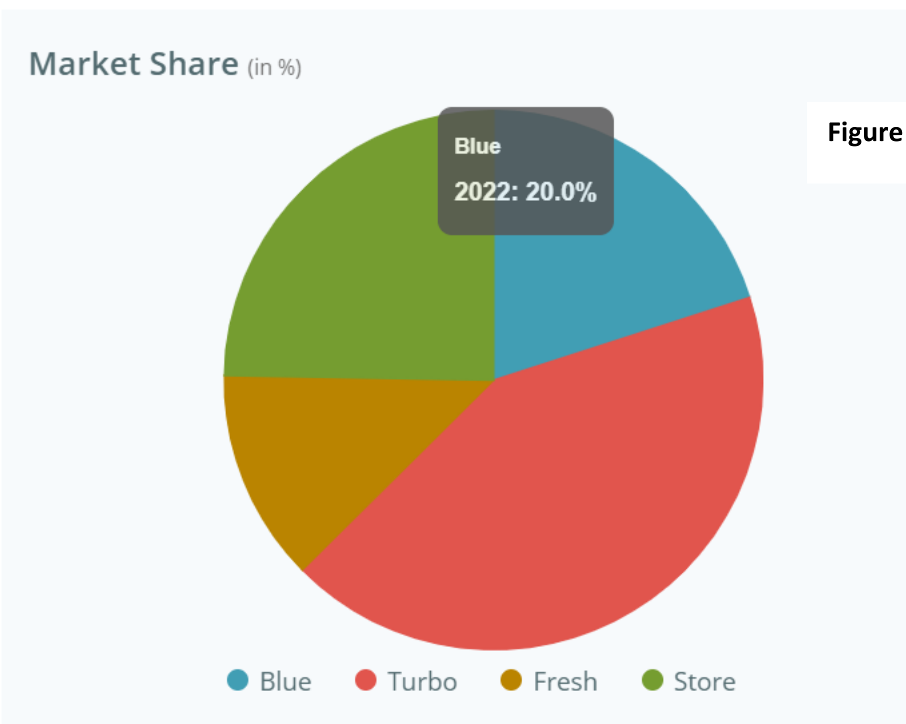


Figure 5.1

Figure 5.2

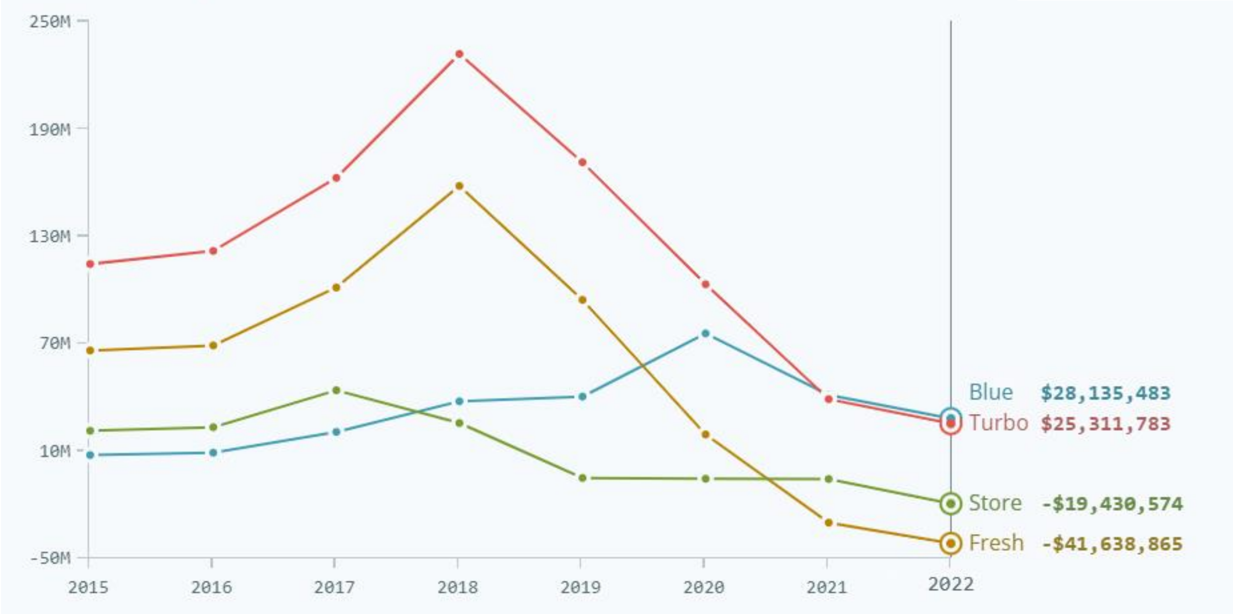
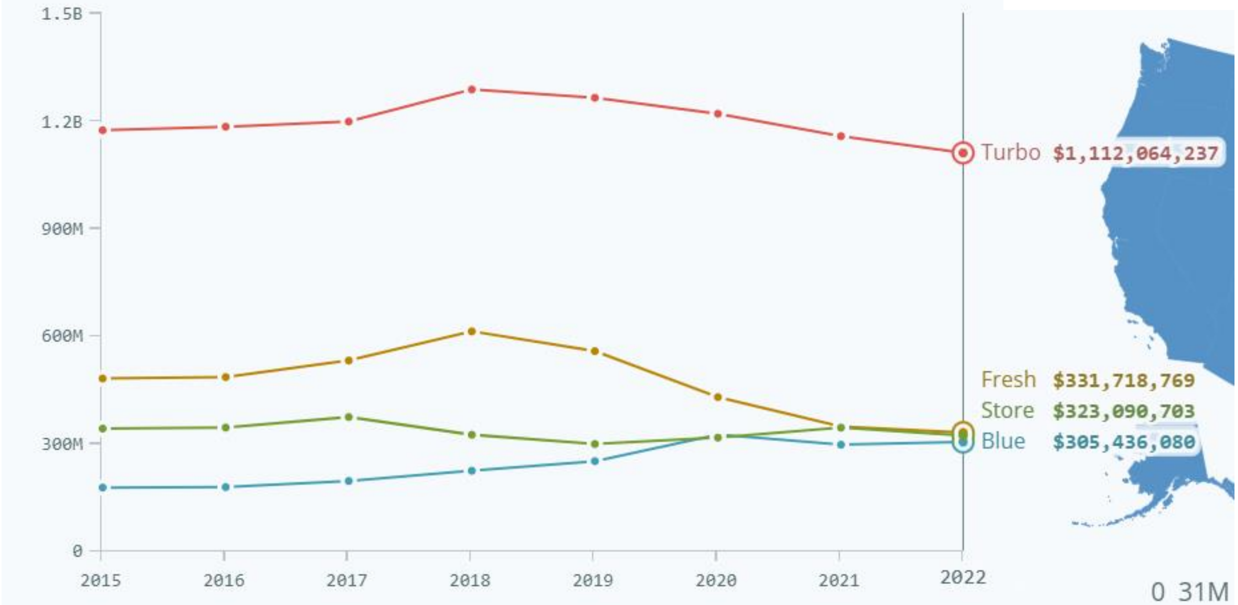


Figure 5.3



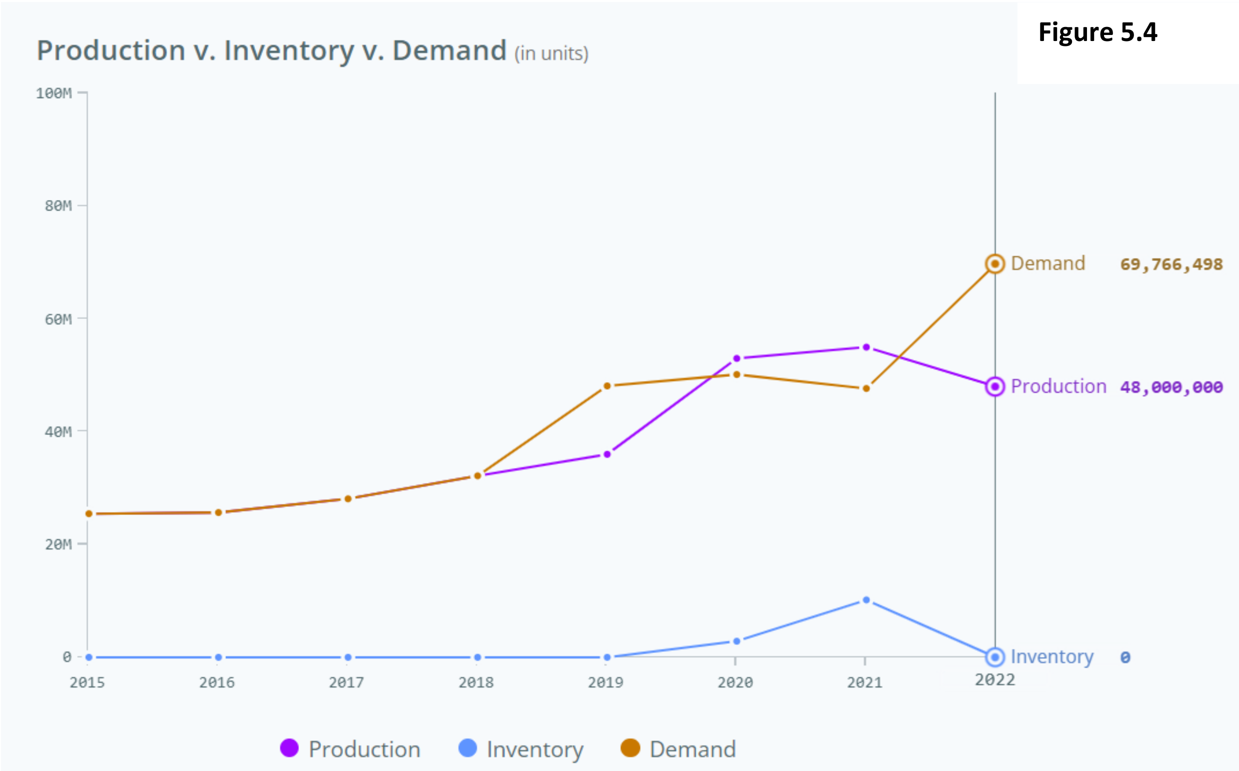


Figure 5.4

Figure 5.5

Increasing brand demand within target segments

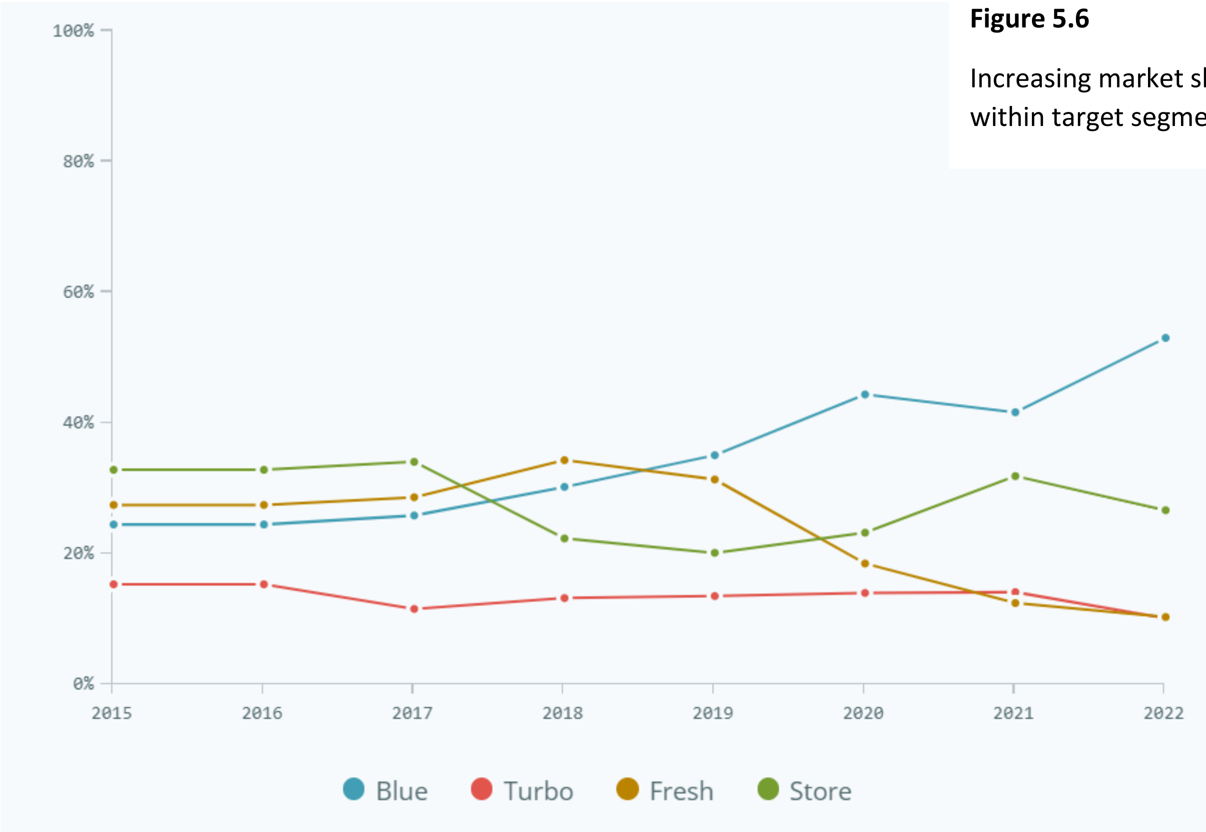


Figure 5.6

Increasing market share for Blue within target segments

Figure 5.7

Final Income Statement

Income Statement (in $US)

	2015	2016	2017	2018	2019	2020	2021	2022
Revenue	$178.2M	$179.7M	$196.7M	$225.3M	$252.0M	$326.0M	$297.9M	$305.4M
Costs								
Variable Costs	$53.5M	$53.9M	$59.0M	$67.6M	$86.9M	$121.1M	$115.1M	$140.5M
Fixed Costs	$87.0M	$87.0M	$87.0M	$87.0M	$87.0M	$87.0M	$87.0M	$87.0M
Other Costs	$30.0M	$29.7M	$30.0M	$32.9M	$37.6M	$42.1M	$54.4M	$49.8M
Total Costs	$170.5M	$170.6M	$176.0M	$187.5M	$211.5M	$250.2M	$256.5M	$277.3M
Operating Profit	$7.8M	$9.1M	$20.7M	$37.8M	$40.5M	$75.8M	$41.4M	$28.1M
Cumulative Operating Profit	**$7.8M**	**$16.9M**	**$37.6M**	**$75.4M**	**$115.9M**	**$191.6M**	**$233.0M**	**$261.2M**

Conclusion

Our goal at Kelsey-White is to maximize profitability for our brands. In this simulation we were successful in increasing Blue's profitability the first two years, but then we saw a decline in profitability the last two years and finished slightly below the 2018 level. We were successful in carving out a market niche for ourselves as an "upscale" alternative to Store brand for budget consumers by targeting our marketing and trade channel spending to those specific market segments. Our targeted spending was successful in driving up demand. Where we faltered was in estimating demand and choosing a production amount. We missed out on millions of sales by underestimating demand.

We learned from this simulation that defining your brand's niche and focusing on it is extremely important to driving up demand. We observed the Fresh brand experience a significant decline in market share and profitability by attempting to compete for Turbo's wealthier consumers at a higher price point. This is an example of a brand misidentifying its target market and failing to cater to them, resulting in significant losses for the brand. Finally, in the years to come, we should be less conservative in choosing our production amount. It is better to have a small amount of additional inventory than to miss out on millions of sales and potential customers because we are not meeting the demand with our production. With continued targeted spending and production amounts more aligned with demand, we will be able to maximize Blue's profitability.

Bibliography

Harvard Business Publishing. (2022). *Data Analytics Simulation: Strategic Decision Making.*