Michael Plasmeier

Michael Nackoul

15.761

March 31, 2011

Question 1:

In the past, the Buying Committee of Sport Obermeyer Ltd. made decisions by arriving at a consensus after spending several hours in a meeting. However, this year Wally Obermeyer asked each member to write down their own forecast. From this data, it is our job to instruct Wally how many of each of the 10 parka styles he should order for next year.

We choose a “wisdom of the crowds” approach to processing each person’s forecast. The wisdom of the crowds theory holds that various data points will assemble into roughly a normal distribution, through the law of large numbers.

Because Wally reported that the Buying Committee’s forecasts were usually off by a factor of two times the standard deviation, we used two times the standard deviation of each member’s estimates in our model to reflect the additional uncertainty.

We based our analysis off the “newsvendor” model. This model is most appropriate when all of the stock needs to be ordered before the season begins. Although Wally does not need to order all of his stock at once, he needs to order well before the season starts.

This model seeks to balance the cost of liquidating excess inventory with the lost revenue of running out and missing a sale. Although Obermeyer is able to liquidate unsold inventory at the end of the year, they do so at a loss. The overstocking cost *o* was given as 8% of the wholesale price. The understocking cost *u* is their gross margin – which is 24% of the wholesale price.

We are looking for the point where, given our sales forecast, the next marginal unit ordered will no longer make us money, but instead cost us money to liquidate. We want to set the probability of running out to the understocking cost per item over the sum of the understocking and overstocking costs per item.



We then calculate the CDF of the probability and then take the inverse. We use the inverse CDF (k) to find the amount of standard deviations we need to order away from the original predicted forecast and get the forecast for the season. The forecast is the mean of each person’s estimate, plus k times the standard deviation of the estimates, adjusted for the additional uncertainty.



The final task for our group was to determine how much to order at this time based on the forecasted demand for the season. The minimum order for each particular style was 600 units, with a total that had to be at least 10,000 units. This is only the first order that Sport Obermeyer has to place. We decided to put in a good base before the Las Vegas show. After the trade show, the forecast is updated and it becomes more accurate (exhibit 5 in case), and another order can be placed.

We decided to order half of our forecast of each item at this time. We believe that this would allow us to react to changes at the Las Vegas show. Further refinement of the estimate might result in a reduction in the forecast, but we do not believe that the reduction will be as deep as half of the item’s current forecast + 600 (so a new order can be placed).

Our team thinks that this will give us enough cushion to give us a head start on the next round of orders without overstocking.

Question 2:

Under the current model, Sport Obermeyer has some operational flaws that could be greatly improved upon. There are three main goals where Sport Obermeyer should work to improve efficiency. Foremost, Sport Obermeyer’s biggest problem stems from the uncertainly in forecasting demand for their products.  They could either estimate better or reduce lead times. Next, they could take other steps to have lower labor and shipping charges at the same level of service.  Finally, they could try to find higher prices for liquidated goods.  Here are some things that could be done in order to accomplish these goals:

Improving Forecasting

* Run focus groups with consumers to see preferences
* Post products on their website or Facebook page and track consumer comments
* Allow consumers to pre-order online and extrapolate demand
	+ Since the Designs are finalized in September of the previous year, allowing customers to pre-order could give a much better detailed forecast to the proportion of designs that need to be ordered
	+ Customers can “get a jump” on next years designs while they are in the shopping season during September-October
* Ask for more real-time sales data from retailer for knowing last-year’s data AND to reorder earlier
	+ Install a computer program that could track the sales of the previous year instantly to get a better feel for how the market is operating.

Cut Costs and Lead Times

* Bring Lo Village Plant online
	+ Have Obersport strictly oversee operations in the new Lo Village plant
	+ Develop quality managers that could run the plant efficiently
	+ Develop a workforce of skilled labor at the plant
* Suggest to Alpine that they open plants in China
	+ Bring in managers from Hong Kong to oversee and develop skilled Chinese labor
* Book time in factories without specific styles known yet
* Use common fabrics in multiple items
	+ Could aggregate stock to concentrate uncertainty (like the Amex Travel Call Center)
	+ Ordering fabric in bulk and storing it can cut down on lead times
	+ Greige fabric is 30% of the total material cost, so reducing the different types you have to buy would cut costs drastically
* Have less styles of items to aggregate demand as well
* Book ocean and air freight earlier to hedge prices on freight
* Ship directly from China to retailers without the Denver warehouse
	+ could save the overhead of running a US warehouse and enable orders to ship directly to retailer

Liquidated Goods at a Higher Value

* Become better at liquidating excess product at the end of the year
* Perhaps work with a deal site like Groupon or Woot to sell excess inventory at higher prices than they are receiving now
	+ Online Barging Sites will help sell the bulk of the excess at a good price for both sides
	+ May also help attract new customers to Sport Obermeyer
* Sell inventory the next season at full price
* Sell excess inventory at new locations
	+ Help to test new markets to see where Sport Obermeyer should expand