

Forecasting sales and production

Forecasting requires a little math and a little logic. For example, does your forecast predict your product will take half a segment's sales when there are four or five products in the segment? Unless your product's positioning, age and MTBF are significantly superior to the other products – and your price is at the low end of the range – it is not likely that you will take half the sales. Does your forecast predict you will take only one tenth of the sales when there are four or five products in the segment? Unless your product's positioning, age and MTBF are significantly inferior – and your price is at the high end of the range or above – chances are you can sell more.

1. The Basic Method

Here is a basic method (sometimes called the **Gross Estimate**) for conducting a sales forecast: The Industry Demand Analysis in the Situation Analysis (Form 3 on p. 29 of the Student Guide) provides close approximations of segment demand for each round. Products can enter or leave the segments; however the demand projections will not change. Alternatively, the Statistic boxes on the Segment Analysis pages (pages 5 - 9) of The Capstone Courier report the last year's demand (the year just ended as of the date of the Capstone Courier) and the segment growth rate. Multiplying that last year's demand by the growth rate will calculate the demand for the upcoming year.

Determine Average Demand

Use the Industry Demand Analysis to determine the demand for the segment/round. Next, develop a gross estimate for the average product's demand by dividing the number of products targeted to the segment by the demand. For example, if demand will be 2,500 units and there are five products in the segment, the average product will see demand of 500 units (Remember, these numbers are in thousands!). Do not count "fringe" products (products that are targeted to other segments) if sales amount to less than 5% within the segment. The trend on a product's market share may "color" your decision to count them or not.

Comparing Competing Products

The Basic Method serves as a reality check. Assuming you and your competitors are doing their best to capture sales, it is unlikely that your product will see more than twice the average demand or less than half. Compare your product to the others and decide whether it is better or worse than average. Start with the Courier Perceptual Map. It shows where products are currently placed, and the Revision Date at the bottom of the page reveals the timing any currently scheduled repositionings will release for sales in the future. Continue the comparison using the Courier's Segment Analyses (pages 5 - 9), which report each product's age, MTBF, price, awareness and accessibility. Any new products about to come to market must have plant capacity. Plant purchases are reported on the Production Analysis page (Courier, page 4). Will your product be better or worse than average? As a quick estimate, look at the December Customer Survey score at the bottom of the Market Segment Analysis page. The Customer Survey drives demand each month. High December Customer Survey scores in the Capstone Courier mean that a product will do well in January and February sales. For example, if there are

four products in December scoring 32, 28, 22, and 14 (for a total of 96), then the top product's December demand would be 32/96 or 33%.

$$\frac{\text{Top Product in Segment's Score}}{\text{Sum of All Scores}} = \frac{32}{32 + 28 + 22 + 14} = \frac{32}{96} = 33\%$$

What monthly Customer Survey scores will your product have during the year? They will change from month to month because the perceptual map evolves, your product ages, and it might be revised. Each monthly score is driven by the 4 P's: product (design), promotion (awareness), place (accessibility), and price. When the TQM module is on (round 3 of Team and Individual Competition), some initiatives could also increase demand. Consider whether or not the top products in the segment can meet customer demand. On the Production Analysis, examine the top products' capacities. Can they manufacture sufficient units? If not, you could have an opportunity to exploit.

See "How is the Customer Survey Score Calculated?" in Capsim's FAQ/Reports section for more information on assessing your product. Read also the Customer Satisfaction section of "How the Simulation is Scored" available on the course materials webpage.

Simple Trend Analysis (If-things-stayed-the-same Estimate)

As the simulation progresses, you might want to employ a simple trend analysis. For example, if in the previous year your Traditional product sold 1.8 million (or if your product stocked out, you had the potential to sell 1.8 million units*), you can look at the segment's growth rate and say "all things being equal, we can expect to sell 9.2% more units this year than last year."

$$1,800,00 \times 0.092 = 165,600$$

Adding 165,000 to last years sales of 1,800,000 units can give you a starting forecast for the upcoming year of 1,965,600 units.

$$165,000 + 1,800,00 = 1,965,600$$

Is this number valid? It is highly unlikely that the market in the upcoming year will be identical to the previous. Prices will adjust, revision projects will complete—the playing field will change. Also, if you made sales because a competitor under produced, you cannot be sure they will make the same mistake again.*

Still, this number can be a good departure point as you assess your product offer and speculate what your competitors will offer.

* The Actual vs. Potential charts in the Courier's Segment Analyses will give you an idea of what companies could have sold had they not under produced. The Actual bars reflect the number of units sold by each company. The Potential bars show what each company *deserved* to sell. If the Potential bar is lower than the Actual, that company picked up sales because another company under produced. If the Potential bar is higher than Actual, that company could have sold more had their product been available.

Worst Case / Best Case

If you wish, you can develop a worst/best case estimate for your product's demand. You want to be able to say "Our worst case for this product's demand cannot possibly be worse than this because..." Similarly, you need a best case estimate that you can defend.

Here is one way to generate a best case. In this example we are using an extreme best case that will generate 120 days worth of inventory should the worst case come about (120 days might be appropriate if your worst case is extremely pessimistic— if your worst case is mildly pessimistic you might want to choose a number between 30 and 100 days). To produce a 120 day's worth of inventory more than your worst case perform this equation: $(365+120)/365$ or 1.33.

$$\frac{365 + 120}{365} = 1.33$$

Next, multiply your worst case sales estimate by 1.33. This can become your best case sales estimate.

Use your Capstone.xls spreadsheet to examine worst and best case implications. Put your **worst case** into the Marketing spreadsheet Your Sales Forecast cell. Put the **best case** into the Production spreadsheet Schedule (less any inventory on hand). For example, if your worst case is 1,000,000 units, and you want a 120 day spread, produce 1,333,000 units (enter 1333 in the Production Schedule cell).

Your proforma balance sheet will reflect these entries. You are telling the proformas to expect sales of only 1,000,000 units but you are producing 1,333,000 units. Your balance sheet and cash flow statements will reflect the cash generated by 1,000,000 times your price, and the balance sheet will reflect the value of 333,000 units in inventory. Similarly, the cash flow and P&L statements will reflect the costs associated with producing 1,333,000 units of finished goods inventory.

You now have an opportunity to visit the Finance spreadsheet and make sure you have enough cash should the worst case actually occur, which can help prevent an emergency loan. Should the best case occur, you will have sufficient units to meet customer demand.

In order to see the financial implications of your best case, put 1,333,000 units into the forecast (enter 1333 in the Your Forecast cell). Now your proformas reflect the cash from the additional sales and a decrease in inventory. At the end of the round your actual results should be somewhere in between your worst and best case.

Educated Guesses

You will need to anticipate the moves of your competitors. The Capstone Courier offers many clues as to their intent. For example, Page 4 will show increases in a product's automation. Can you expect a price drop for that product? On page 1, did a competitor incur an emergency loan? Will this crimp their Marketing budgets?