

What's in Your Crystal Ball?

How Forecasting Can Improve Your Business Planning

By Armen Ekmekji

Forecasting is the process of analyzing data to predict a future event. There are many areas of a business that can be forecasted, such as technology trends, financial performance, capacity needs, and sales demand. This article will focus on sales demand forecasting which, in a Sales Inventory & Operations Planning (SIOP) activity, is the basis for developing long-term resource needs for capacity and the resulting financial performance of a firm. Any firm that engages in demand forecasting must determine their objective, the scope of the forecast, and the methods used for calculating it.

It is important to first determine why demand forecasting is being performed. Is it to predict the upcoming resource needs and equipment utilization? Does your ownership require a long-term financial plan? The timeframe for which to predict future sales is dependent on the firm's business planning cycle and the industry that it serves. For example, firms that participate in seasonal industries may only be interested in forecasting sales for the upcoming seasonal demand, whereas firms that produce long lead-time products may want to look out a couple of years. My advice is to build a process that looks out a minimum of 18-24 months, especially if it is difficult to hire talent in the industry or the job requires a lengthy training period for new hires. The frequency of the activity should also be determined. In my experience, a quarterly demand exercise is a good cadence to establish.

After determining the objective, it is necessary to identify the scope and tools

needed for the exercise. Most industries publish forward-looking market intelligence reports that will provide a roadmap for activity including OEM build rates, aftermarket requirements, and a year-over-year rate of change. It is important to decide which data is most important to your firm and, combined with the timeframe you seek to forecast, how far out you use that data for your forecasting needs.

At Weber Metals we mainly serve the aerospace industry. As such, we use a service called Forecast International to evaluate build rates for various programs for which we supply forgings. Since the lead time from forging to aircraft build is so long, spanning finished part machining and sub-assembly in the value chain, we typically offset the published build rate by 1 year to be conservative in our estimates. For example, we would use 2024 aircraft build rates to determine the demand levels we need to produce in 2023.

Once you've established your objective and scope, it's time to determine the methods to build the forecast. This will likely require you to use internal data specific to the products you are forecasting, including but not limited to the following:

- Material type
- Weight
- Industry segment
- Program
- Quantity per platform
- Market share

Below is an example of how a demand forecast could be built for a group of products.

This article focused on simple tools within a quantitative method of forecasting. More intricate quantitative methods could be used to analyze data such as Regression, Exponential Smoothing, and Moving Average analysis. It all depends on the level of detail and perceived accuracy you want in your planning. Regardless of the quantitative tools you choose, to have a more comprehensive view of your demand forecast you should also incorporate qualitative methods. These range from reading expert opinions, speaking with your customers to get their sense of what's ahead, and surveying your firm's leadership to get a disparate view of the opportunities and risks that may influence how you portray your long-term view.

Demand forecasting is an important part of any successful business to help with strategic planning and business decision-making, budgeting and financial projections, and resource needs and operational preparation. I hope this summary helps your company improve its planning in the future.



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Part No.	Material Type	Weight (lbs)	Program	Qty/Aircraft	Market Share	Build Rate (pieces)			Demand forecast (pieces)		
						2023	2024	2025	2023	2024	2025
12345	Aluminum	100	737	2	100%	500	550	600	1000	1100	1200
23456	Titanium	250	A350	1	50%	80	86	92	40	43	46