Improving Performance with SKU Forecast

A Step-by-Step Guide to Creating a SKU Forecast

Accelerated Analytics ®

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Objectives

The purpose of this article is to explain the process of creating a SKU forecast. A SKU forecast is used to predict future sales demand so you can ensure adequate inventory is available on the shelf. In the Store Analysis and SKU Analysis articles in this series, we explain that part of the overall methodology is to determine which stores and SKU's are the highest contributors. This is so you can reduce the volume of data that you need to analyze and focus on the most important contributors. We recommend you read these two articles before conducting the SKU forecast, and then limit the SKU forecast to the A and B stores and SKU's.

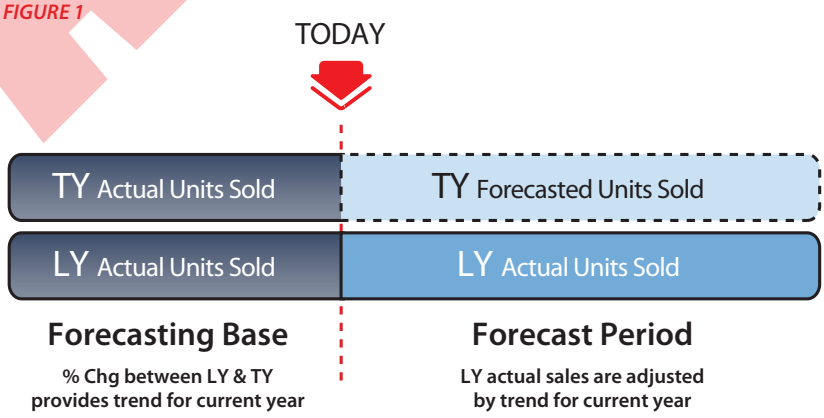
Key Considerations

A SKU forecast is often compared to an out of stock analysis. An out of stock analysis provides a rear view look at what has happened; a SKU forecast looks into the future to predict and avoid out of stocks.

It should be noted the forecasting model in this article is for store replenishment, and is not intended to be used for manufacturing production planning. Many vendors produce product outside the U.S. which makes long range forecasting necessary due to long transportation lead times. In this article, the forecast model is meant to identify short-term out of stocks before they happen so you can work with your replenishment manager to take corrective action. Corrective action is going to require the vendor order inventory and have it on the shelf within a 2 or 3 week period of time.

The forecasting process uses two time periods to determine the forecasted units: a current selling period which we call the forecasting base, and prior year actual sales which we call the forecast period. The forecasting base is a current period of sales and is compared to the same period in the prior year to determine the trend (growth or decline) of sales this year over last year. The forecast period of LY actual units sold is then adjusted by the trend for the current year to reflect current market conditions. *See Figure 1.*

FIGURE 1



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There are several things to consider before setting up your data table. First, how many weeks should be included in the forecasting base period? To make this decision, consider: are your products seasonal or subject to other large changes in sales velocity due to promotional events, weather, or other factors? If the answer is "Yes," then the forecast base period should be relatively small to avoid missing a change in velocity. If the answer is "No," then a longer forecasting base is suitable. Typically, a seasonal vendor should choose a forecast base of approximately 5 weeks, while a non-seasonal replenishment vendor with little variability should choose a forecast base of approximately 10 weeks.

The next decision to be made is how many weeks in the future to forecast demand. Most of the time, the forecast period will be 5 to 20 weeks. The forecast period should correspond to the lead time necessary to ship inventory to stores. A forecast that is longer than 20 weeks is likely to introduce errors due to changing demand, especially for a seasonal vendor.

Step-By-Step Construction

Pre-Work: Set-up Data Table

To prepare for the analysis, set up a data table as seen in Figure 2. Notice the table is at a SKU and store level of detail, and each individual combination is uniquely forecasted based on what is happening at that store. To set up the table, you will use units sold for the base forecasting period (both this year and the comparable period from last year), the units sold for the forecast prediction period, and the current OH. Insert several rows between the sales numbers and the OH column. We will be adding calculated columns to the data table between the sales columns and the OH column, but exporting the sales data with the OH data will save a step later and avoid having to match rows to ensure accuracy. *See Figure 2.*

FIGURE 2

STORE	SKU	LY UNITS 28 WEEKS ROLLING THRU MOST RECENT WEEK ENDING	TY UNITS 25	CURRENT OH 7
266	154787	30	33	2
6367	154787	25	66	29
233	149446	45	21	14
265	149446	15	56	22
6331	149446	53	52	28
6350	149446	35	118	29
6363	149446	95	130	46
6335	156743	51		