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# 7 Deadly Sins of Sales Forecasting

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Lust, pride, greed, gluttony, envy, anger, and sloth. Collectively, they are known as The 7 Deadly Sins. Sound bad? You bet!

If you are guilty of one or more of the big seven, check in with the guy in the red suit with the pitch fork and pointed tail. He has an eternal resting place reserved for you surrounded by fire and brimstone.

There is a sales forecasting equivalent to The 7 Deadly Sins. They are activities that companies perform in their daily, weekly and monthly sales forecasting processes that contribute to increased SKU-level sales forecast error. The 7 Deadly Sins of Sales Forecasting have consequences that are the supply chain equivalent to fire and brimstone, including increased sales forecast error, excess inventory and missed customer due dates.

**Avoid The 7 Deadly Sins of Sales Forecasting and you will be well on your way to building a world-class demand planning process.**

## *The 1<sup>st</sup> Deadly Sin*

### Using Shipment History

Sales forecasting systems use sales history data to generate the statistical forecast for future periods. The key issue is the type of sales history used to run the statistical forecast – shipment history or demand history.

Let's say that your customer placed an order for 1,000 units of Item 12345 for delivery in July. Item 12345 is on backorder, and you are not able to ship the product until September. Does your ERP system post the sales history as July demand (when the customer wanted the product) or September demand (when you were able to deliver the product)?

If the answer is that your system posts the history as September history, your sales forecasting system will use 0 units in July and 1,000 units in September to drive the statistical forecast. Using shipment history will perpetuate your backorder situation. The appropriate procedure is to post the 1,000 units as July history for sales forecasting purposes. Avoid the First Deadly Sin and use true customer demand history to generate the sales forecast.

## *The 2<sup>nd</sup> Deadly Sin*

### Bad Data

Congratulations if you avoid The 1<sup>st</sup> Deadly Sin and use customer demand data as the basis for generating the statistical forecast. However, the demand data can still be "polluted" with the effects of one-time or non-recurring orders that can lead to inaccurate statistical sales forecasts. Examples of the bad demand data that gets posted to the demand history file include:

- Sales due to promotions that will not be repeated in the same period next year
- Spikes in demand due to special, one-time customer orders
- Pipeline fill orders by big-box retailers
- Special orders due in advance of quarter-end price increases
- Using customer-specific demand data that is too granular to be statistically significant
- Unit of measure conversion issues, such as when items are sold as both individual units and three-packs

It is imperative that you periodically scrub the demand history file to eliminate the effect of the special orders. Some systems automatically filter demand history values that are outside of a statistical confidence interval. Other systems identify the exceptional demand and rely on the user to determine how to adjust the sales history to eliminate the bad data. The key is to include data scrubbing as part of your regular demand planning process.

## *The 3<sup>rd</sup> Deadly Sin*

### Excessive “Gut Feel” Overrides

Many companies commit hours, or even days, of effort each month to review and adjust the system’s statistical forecast. The sales forecast sometimes travels from the forecast planner, to the sales team, and to the product management team with each level making their adjustments to the sales forecast. Too often, planners base forecast adjustments on “gut feel” and not on specific knowledge of future customer activity. Raise a red-flag if you feel compelled to override more than 10% - 20% of the system’s statistical forecasts.

Use the system’s statistical forecast as the starting point for making forecast adjustments. The rule of thumb should be to adjust the system’s statistical forecast only if you know something about the future that is not reflected in the demand history. Otherwise, resist the urge to adjust the forecast just to make it look pretty. Also, it is imperative to measure whether the system’s statistical forecast or the forecast adjustment is closer to the actual sales. You are likely to find that the “gut feel” forecast adjustments are actually making your sales forecast less accurate than if you had left the forecast alone.

## *The 4<sup>th</sup> Deadly Sin*

### Poor Event Planning

Some companies do the opposite of The 3<sup>rd</sup> Deadly Sin of entering excessive forecast overrides. They don't make enough forecast overrides when special events are scheduled to occur. Poor event planning is often the source of missed customer due dates, product expedites and excess inventory.

The typical special events that occur that do not have the benefit of being reflected in past sales history include:

- New item introductions
- Promotions
- Item substitutions
- Item replacements

It's imperative to develop an internal collaboration process that brings together all of the individuals responsible for special events impact planning. You should assign clear roles and responsibilities for each individual at each step of the special events forecasting and planning process. Also, there needs to be frequent review of how actual sales are performing vs. the forecast to ensure that the right level of inventory is available to meet the special event needs.

## *The 5<sup>th</sup> Deadly Sin*

### Senior Management "Meddling"

It is always interesting to see the attendee list for the weekly or monthly demand planning meeting and see the company President, Chief Financial Officer, VP Sales or VP Operations on the list. It is almost certain that The 5<sup>th</sup> Deadly Sin is sure to occur. Senior executives have no business exerting their bias or influence on the SKU forecasts.

Executive management meddling can surface in a variety of ways:

- Direct forecast overrides by executives offering their opinions during the demand planning meeting
- Threats of what will happen if service rates don't improve (resulting in forecast increases in an attempt to increase inventory)
- Threats of what will happen if inventory is not reduced (resulting in forecast decreases in an attempt to decrease inventory)
- Forcing the budget at the product family level down to the SKU forecast as a result of the Sales & Operations Planning process

The sales forecast should be the company's best estimate of customer demand. It is an inappropriate technique for executives to adjust the sales forecast as a means of manipulating inventory levels and fill rates. Inventory and service levels are best managed as part of the supply planning and inventory replenishment processes.

Unfortunately, The 5<sup>th</sup> Deadly Sin of executive management meddling is often the easiest of the Deadly Sins to recognize and the hardest to do anything about.

## *The 6<sup>th</sup> Deadly Sin*

### Not Measuring Sales Forecast Accuracy

It is surprising how few companies do a reasonable job of measuring forecast accuracy. When challenged to this fact, some companies respond with desperation, "even if we did measure forecast accuracy, what can we do about the large errors?" The answer is that you can do plenty about sales forecast errors. However, the process starts with measuring forecast error and understanding the root causes of high forecast errors.

Some basics of sales forecast accuracy reporting include:

- Measure forecast accuracy at the SKU and product family level
- If your product has long lead times, account for the lead time “lag” in the sales forecast accuracy reporting
- Measure which is more accurate – the system’s statistical forecast or the planners’ override forecast
- Determine if forecasts are consistently too high or too low, indicating a bias in the statistical forecast or in forecast adjustment
- Perform root cause analysis on items with high forecast errors to learn the real reasons for the forecast error

## *The 7<sup>th</sup> Deadly Sin*

### Safety Stock Based on Forecast Error

Safety stock inventory exists to cover periods when actual demand is greater than the forecast. It is a common system feature to compute SKU safety stock quantities based on forecast error and a desired customer service rate. Just plug in a 98% service rate and let the system compute the safety stock quantity. Sounds too good to be true, right? Yes, until you look at the math of the traditional safety stock calculation.

The traditional safety stock calculation based on forecast error does not distinguish between periods when the forecast is too high (when we don’t need safety stock) and when the forecast is too low (when we do want safety stock). We have listed six other Deadly Sins that contribute to excessive forecast error.

If we have forecasting processes that contribute to forecast error and the technique that utilizes forecast error results in excess inventory, why would we use it? Here are a couple of techniques to utilize instead of the traditional safety stock calculation based on forecast error:

- Utilize **new statistical modeling techniques** that eliminate the bias of periods when the forecast error is a result of the forecast greater than actual
- Utilize an inventory planning strategy **based on safety time** rather than the fixed safety stock calculation that utilizes forecast error

## Conclusion

### Avoid the 7 Deadly Sins of Sales Forecasting

The 7 Deadly Sins of Sales Forecasting contribute to increased forecast error, increased inventory and lower customer service levels. Deadly Sins #1 and #2 are the result of using incorrect data to base the sales forecast. Deadly Sins #3, #4 and #5 result from flawed forecast review and adjustment procedures. Deadly Sin #6 is a result of not adequately reporting forecast performance or using root cause analysis to understand the causes of forecast errors. Finally, Deadly Sin #7 results from utilizing the bias and inaccuracies resulting from the Deadly Sins #1 through #6 as the basis for managing inventory levels.

**Avoid The 7 Deadly Sins of Sales Forecasting to escape the supply chain fire and brimstone resulting from excessive forecast error.**



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Fred Tolbert has twenty-five years of supply chain management experience. He is Principal of Southeast Demand Solutions, LLC, the Southeastern reseller of the Demand Solutions suite of demand planning software. In this position, he leads the Demand Solutions marketing, training and consulting activities in Florida and Georgia.

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Fred has BBA and MBA degrees from the University of Georgia. He is active in APICS, The Association for Operations Management, and served two terms as president of the Atlanta APICS Chapter. Fred has recently completed his term as the APICS Southeast District Director, representing ten southeastern states on the APICS society Board of Directors.

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