



Leading in a Time of Crisis - How to Manage Your Oracle Retail Demand Forecast

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PURPOSE STATEMENT

This document provides recommendations on how to manage RDF forecasts with the unusual demand patterns being experienced during and post the pandemic. It includes suggestions on managing forecast settings and history adjustments and is intended solely to help you achieve the best forecast throughout these uncertain times.

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HOW TO MANAGE YOUR FORECAST

We understand many RDF customers are experiencing challenges managing forecasting during this unprecedented era in Retail. Depending on the impact to your business, the Oracle Retail team recommend RDF users review and assess the following forecasting scenarios during and after the pandemic period.

1. **Changing and erratic sales demand in certain product categories:** For example, demand has aggressively risen over the last several weeks for cleaning products that may have caused out-of-stocks for some days of the week resulting in a higher than normal baseline forecast. There are two ways to address this challenge by either (A) adjusting the sales history using RDF's built-in automated preprocessing methods or by (B) switching to a more reasonable forecast method for the immediate term.

A. Adjusting for the increased sales history using preprocessing methods:

- *For RDF v15 and above (both for on-premise and Cloud Services), there is an **Outlier** configured as part of the preprocessing function. You can choose to **manually flag** the Outlier indicator or have the system **automatically** detect the outlier data points using the specified **Outlier Factor** variable (default value is at 5).*
- *For all other RDF versions, you may want to consider manual **User Adjustments** for sales history corrections, or feel free to contact us for other options and guidance.*
- *When adjusting for a sudden decrease in sales history due to higher than normal demand in the previous weeks utilize the **out-of-stock adjustments** via the built-in preprocessing function to correct the sales volume during those decreased sales or non-sale weeks. It is important to note that this step of out-of-stock correction should occur after the Outlier has been corrected so that you have the corrected baseline to adjust the out-of-stock weeks.*

- *When the out-of-stock indicator is not timely enough being available in RDF, or simply unavailable, then manual **User Adjustments** will need to be deployed to correct the decreased sales history periods.*

B. Switching to a more reasonable forecast method:

There could be several reasons that adjusting sales history is not a suitable option. For some, the Outlier function is not available in your version or configuration of RDF; for others the concerns might be that the peaks may be over-adjusted resulting in a loss of relevant promotional activity. In those cases, we may turn to **RDF forecast settings** of which there are two options to consider:

- I. Switch to the **Simple Forecast** method with **Max Alpha** set to 0.1 or lower to reduce or minimize the impact of the recent high-volume sales to the forecast. One way to think about this **Max Alpha** value is that if the normal sales rate is about 10 units per week, but recently it has increased to 100 units, which is 10 times normal demand, we suggest you set the **Max Alpha** to be inverse of that effect, which is $1/10 = 0.01$. Keep in mind though, the actual alpha value used in the forecast will be the optimized value up to that **Max Alpha**, it may not necessary be exactly at 0.01.
- *For RDFCS v18, there are two forecasting components in the baseline forecast; **Base Demand** and **Seasonality Curve**. For Base Demand you will set either **Simple or Moving Average as the Forecast Method** in the Forecast Setup, Base Demand step and Advanced Parameters tab. You can set **Max Alpha** in the same view. For **Seasonality Curve**, you will need to pay attention to Summary Statistics in the Estimation Review, to make sure not too many curves are being pruned in step 5 Correlation. If that happens, you will want to consider adjusting the **Correlation Threshold** in the Estimation Setup workspace, Pruning step, Seasonality Pruning tab, to a lower value to allow more curves to be accepted.*
 - *For all other RDF versions, there are two forecasting components in **Base Forecast; Final Level and Source Level**. For Final Level the default is set at **Simple/IntermittentES** and you only need to adjust the **Max Alpha (Simple Holt)** value in Forecast Administration, Advanced Settings tab. This method generates an Interim Forecast, which is used to calculate the ratio to spread the Source Level forecast. Using the appropriate method here ensures all the item/locations still get their reasonable share from Source Level forecasts to avoid any recent high-demand items getting an unequal amount of share.*

- *For Source Level forecasting, that controls the volume and shape of the forecast for that group of items and locations, the default is **Seasonal method**. If there are many items in this group that have an increased demand and you believe this method is overrating to recent trends, you can consider switching that method to **Simple** to keep the baseline forecast still in line with normal demand.*
- II. Alternatively switch to the **Moving Average forecast** method with a Window Length set to 26 or 52 weeks. The concept with this approach is that you want to use a longer horizon to “dilute” the impact of the most recent high-volume sales.
2. **Locations are forced to close due to regulations:** In this case, we need to force the forecasts of the affected location to be zero (0) during the closure. There are several ways this can be achieved.
- i. If your RDF environment has configured an external multiplier, then you can set that multiplier to zero (0) for the currently planned closure weeks. RDF may still forecast, but the final forecast will be forced to be zero (0).
 - ii. If you have an extra causal event that is not currently used, you can try to repurpose that measure and set an override effect of zero (0). RDF may still generate a baseline forecast but will force the system final forecast to be zero (0).
 - *For RDFCS v18, you can set the override effect of zero (0) and promotion type to **Override** in the Estimation Review workspace, Causal Effects step. To keep the adjustment in the system during this closure period, set Adjust Forecast Method to Keep Last Change in the Forecast Setup workspace.*
 - *For all other RDF versions, you can set the override effect of zero (0) and promotion type to **Override** in the **Promotion Effectiveness** workbook. You can also approve zero (0) forecasts for the closure weeks and let RDF keep that adjustment. RDF may still generate a system forecast, but the approved forecast will be zero (0) per your adjustment. To keep the adjustment in the system during the pandemic, set **Keep Last Change to Total** for your entire environment in the Forecast Administration workbook.*
 - iii. If the demand has shifted from closed locations (brick & mortar) to other locations (online), then in addition to the actions above you want to pay attention to alerts generated to online channels first as the forecast should pick up quickly with the increased demand in the online locations. If the demand volume becomes significantly more than normal volume, then you can consider the recommendations we have in the above sections to act by either

adjusting the sales history, and/or switching forecast methods/parameters to a more reactive setting.

3. **Managing Alerts:** During this period of the COVID-19 pandemic alert “hit” counts may increase significantly. There are several ways to deal with this challenge:
 - i. Alerts are still the best way to manage your forecasts and the most effective for you to locate where there are forecast problems. When you go through the exceptions, you can incorporate the guidelines discussed above to address the problematic areas.
 - ii. If the alert hit count has increased significantly beyond your average weekly work load, try to adjust the alert thresholds first (temporality) to reduce the count.
 - iii. If you feel certain alert conditions need to be adjusted to work better, please feel free to contact us and let us assist to make the alerts work better for you.

Managing your RDF forecast after the Pandemic

We all hope that this Pandemic will be over soon, and life and business will return to normal. At that time, you will need to consider reverting any temporary adjustments recommended above that you may have made as well as monitor RDF carefully as it self-adjusts to trading and business activities post the impact of the COVID-19 Pandemic.

- a. **Locations forced to close due to regulations:** In this case, hopefully the out-of-stock indicator will be active. However, do keep in mind that:
 - i. The out-of-stock preprocessing adjustments need a couple of weeks of normal sales to make effective corrections. Therefore, those two weeks need to happen first, then you will see the impact and accuracy of the adjustments.
 - ii. In most cases, the out-of-stock indicator is driven by on hand stock records. With stores closing, the on hand most likely is not zero (0). In other words, the out-of-stock indicator may not be automatically recovered. In this situation, consider making a User Adjustment using the Last Year sales history as a guide to fill in those weeks that the stores are closed.
 - iii. Remember – the trading data anomaly introduced during this period will be felt for a long time and will need to be monitored carefully by users and as RDF starts to auto correct the impact that this unusual trading period will do to forecasts moving forward.

- b. **Increased demand in certain product categories (for example, face masks, hand sanitizer, disinfecting wipes):** After the COVID-19 pandemic is over you will have a good knowledge of the periods and magnitudes of the increased and erratic demand. We suggest you properly smooth out those periods of the abnormal sales history as follows.
- i. If you have an Outlier preprocessing function configured, use that to “scrub” the affected history per its intended function;
 - ii. If you do not have the Outlier preprocessing function configured, try to override the affected history using Last Year’s sales volumes as a guide.

The Oracle Retail team is here to help and is standing by its customers and solutions during these difficult and challenging times. If you have any questions regarding this bulletin, or the RDF solution, please feel free to email us at retail-central-consulting_ww@oracle.com and one of our forecasting specialists will be in contact with you.

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