Scaling: Using Advanced BOM's

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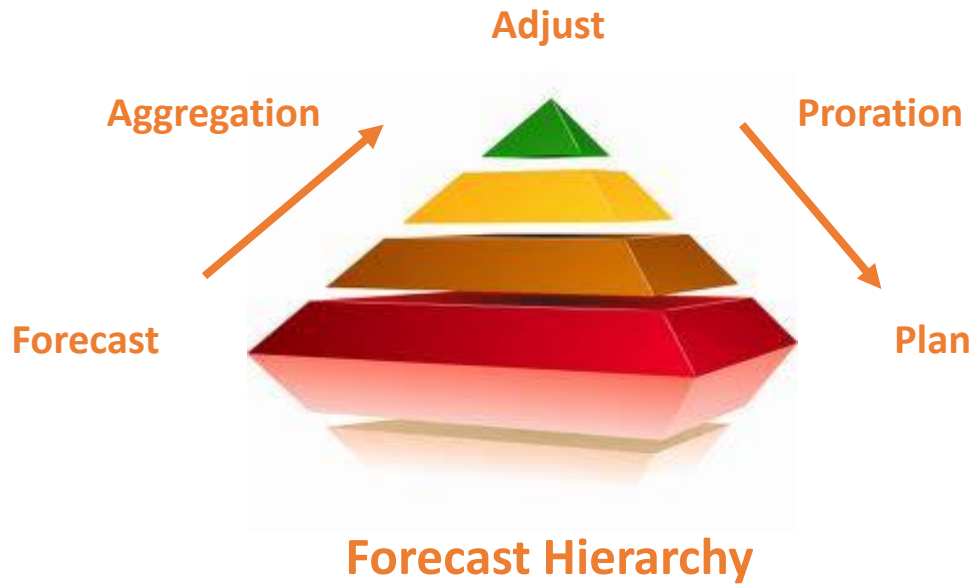
Typical Forecasting Process

- Import history at SKU level
- Statistical forecast at SKU level
- Aggregate to family
- Adjust family forecast
- Prorate adjustment to SKU
  - Proration on each SKU's % of the monthly sales forecast



Forecast Proration Issues:

- Under forecasting low volume SKU's
  - 0 monthly SKU forecasts, receive no proration of family forecast adjustments
- Over forecasting low volume SKU's
  - Will that one-time spike in 3X sizes SKU repeat next year?

Other Forecasting Challenges

- Typical Apparel Company Inventory Items:
  - 25,000 SKU's (Style / Color / Size)
  - 1,200 Style / Color combinations
- Problems many companies face:
  - High number of SKU's
  - Very sporadic sales history or fringe SKU's
  - Demand spikes that will not repeat
  - Marketing talks aggregate levels – Style or Style / Color, not SKU's
  - Limited time for forecast review

Product	SKU's per Style / Color	Typical Sizes
T-Shirts	6	S, M, L, XL, 2X, 3X
Running Shoes	14	6, 6.5, 7, 7.5, 8, 8.5, etc.
Men's Pants	40+	30 X 30, 30 X 32, 30 x 34, etc.

What Advanced BOM Does

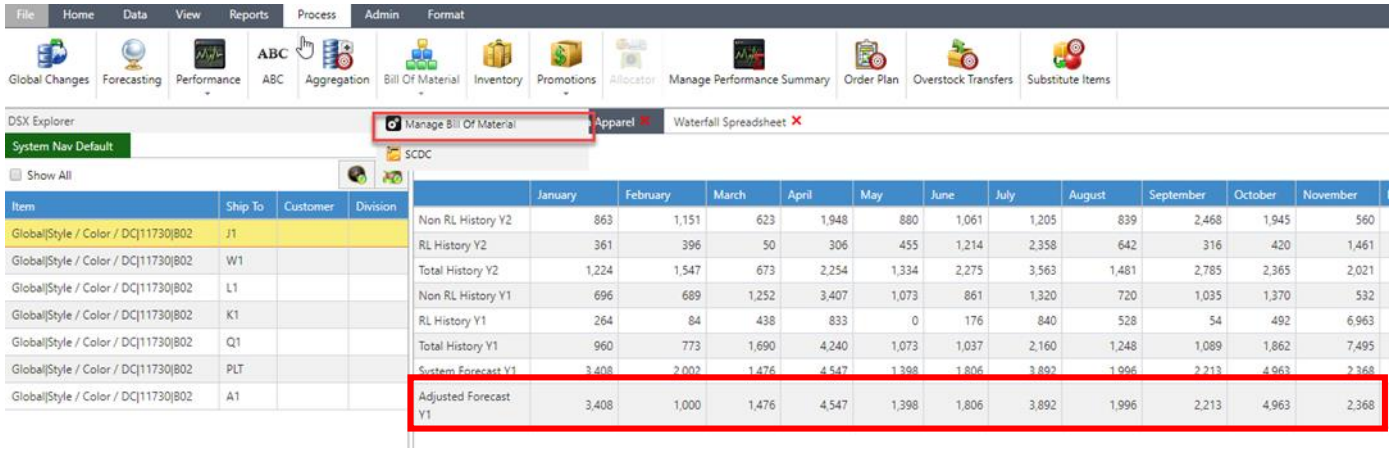
- Uses data generated for Aggregate records to create a Parent / Child relationship
  - Example:

Child records:	**13673-BLK-S** **13673-BLK-M** **12673-BLK-L**
Parent records:	13673-BLK

- Allows user to select a period of time to compute the % that each child record is of the parent record
  - Uses time periods such as 12 months of Adjusted History or 6 months of Adjusted Forecast to compute the %'s
- Use the % to "explode" or "prorate" the Aggregate Forecast to the SKU Forecast

Advanced BOM Procedure

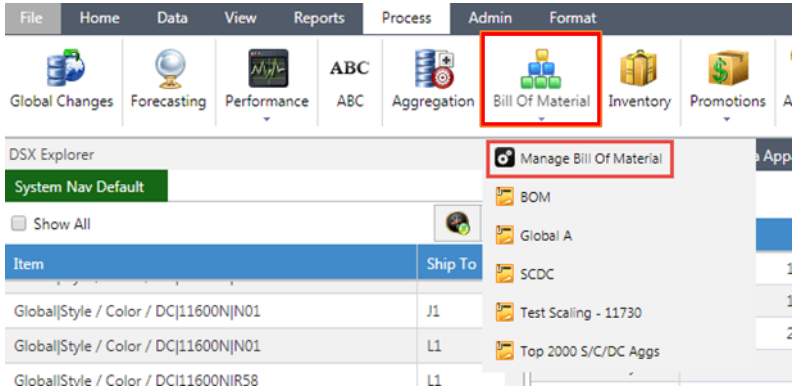
1. Import sales history at SKU level
2. Aggregate sales history to:
   - Style / Color – Mizuno
   - Style / Color / DC – Delta Apparel
3. Generate statistical sales forecast at Aggregate level
4. Conduct forecast review / adjustment at Aggregate level

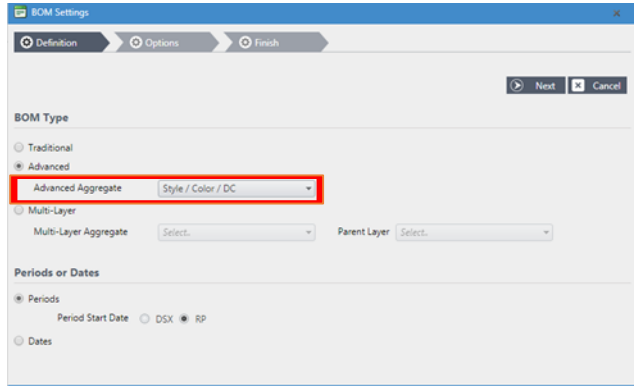


Advanced BOM Procedure

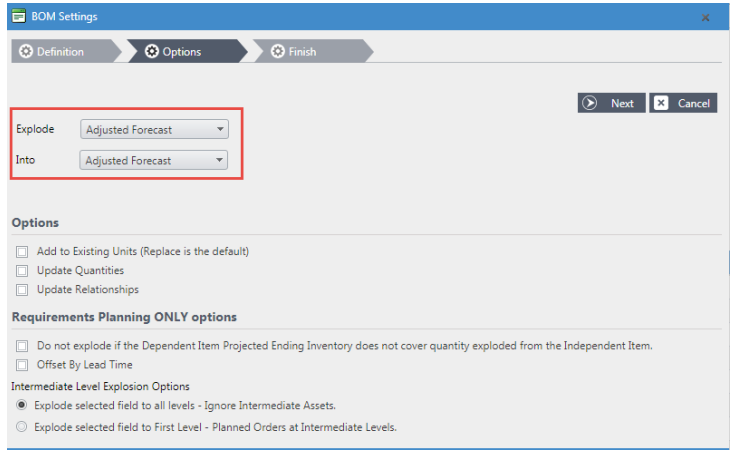
5. Create Advanced BOM setting

   - Select Aggregation setting that created aggregate records



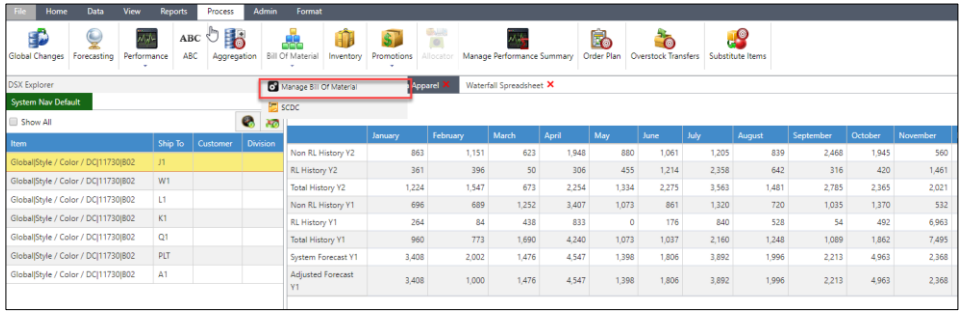


6. Select Explosion Fields (Explode Adjusted Forecast into Adjusted Forecast)



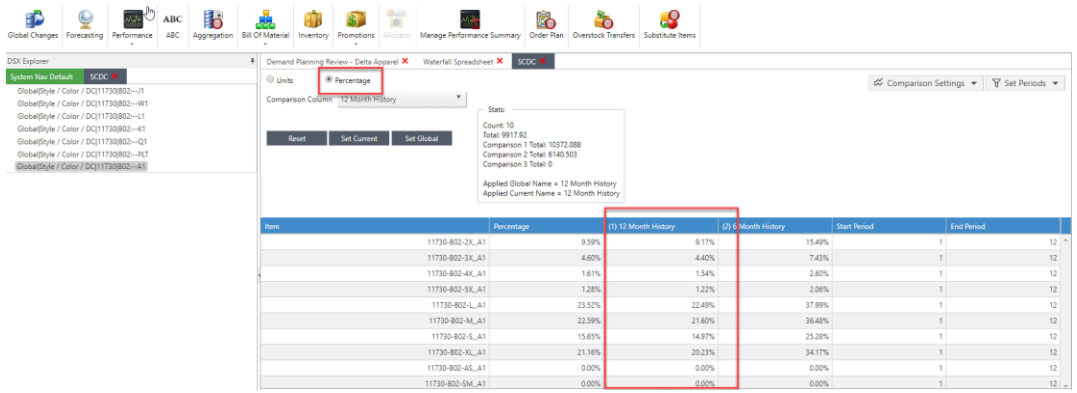
Advanced BOM Procedure

7. Enter BOM Setting – Select Appropriate Aggregation setting



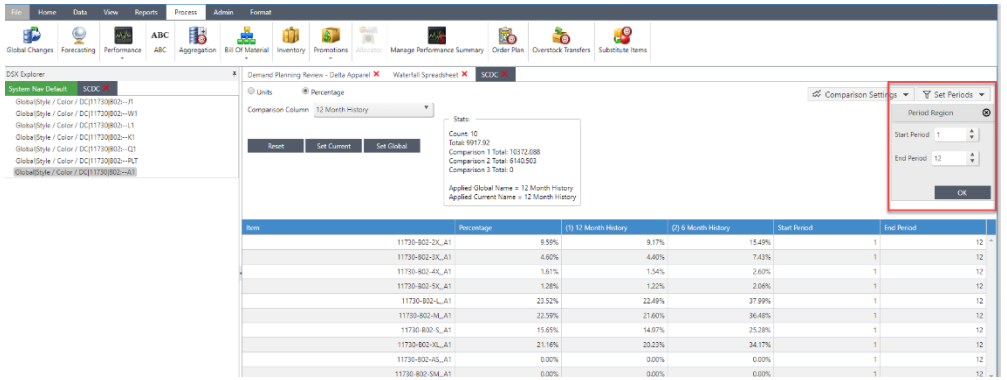
8. Select Aggregate record

- Set up comparison field (12 months history, 6 months history, etc)
- Percentage of each SKU to the total displays



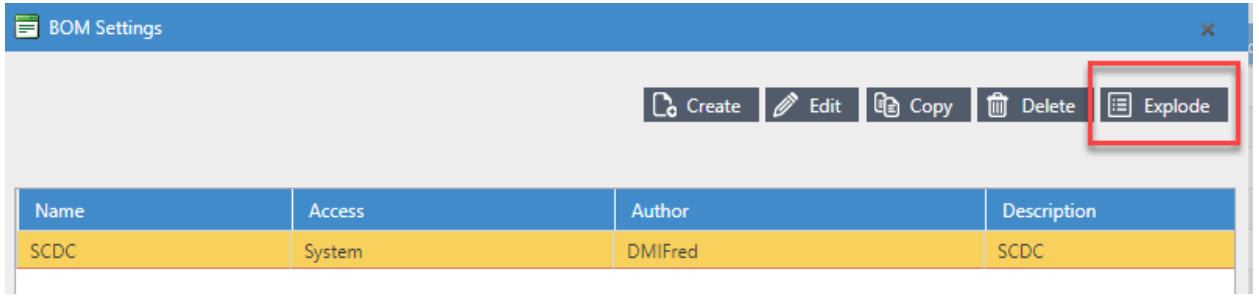
Advanced BOM Procedure

9. Assign number of periods to explode (1 to 12 or 1 to 24)



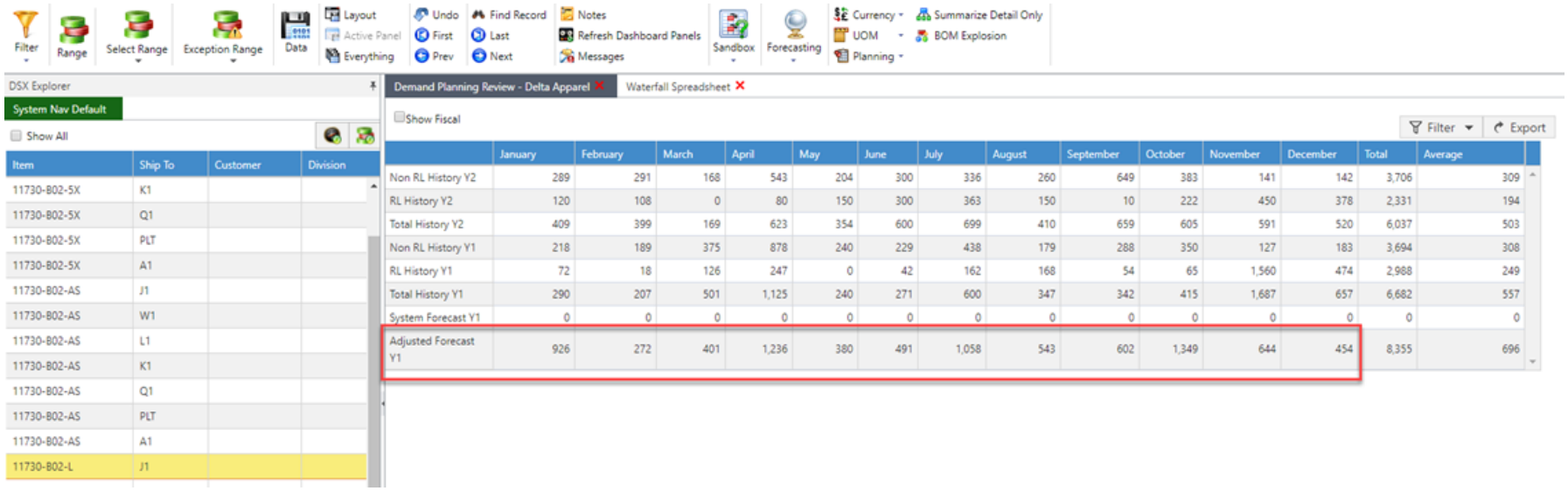
10. Explode Advanced BOM: Generate statistical sales forecast at Aggregate level

- Generally Adjusted Forecast – Aggregate to Adjusted Forecast SKU



Advanced BOM Procedure

11. Result is now an Adjusted Forecast at SKU record
    - Note: No system Forecast at SKU level

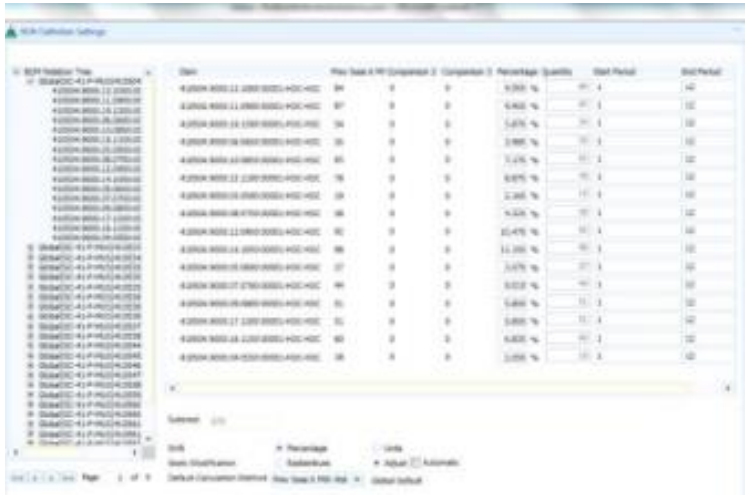


Comparison of Aggregation / Proration and Advanced BOM

	Aggregation / Proration	Advanced BOM
Level History Imported	SKU	SKU
Statistical Forecast Level	SKU	Aggregate (Style / Color)
Forecast Proration Basis	SKU % of Aggregate Sales Forecast for each month	SKU % of Aggregate Sales history over an extended period of time (6 to 12 months)
Advantages	• Simplicity • Little data maintenance	• Forecast more accurate at Aggregate level • Forecast review concentrated on Aggregate records, not SKU records • Size curves stable and predictable over 6 – 12 month period • Spikes level out over time • Low volume SKU's still get their % proration of the aggregate forecast • Can base proration on any desired periodic array
Disadvantages	• Requires SKU forecast review • SKU's forecasts impacted by demand spikes • 0 SKU forecast months receive 0 proration of forecast adjustments	

Advanced BOM Case Study: Mizuno Apparel Company

- Prior to DS, exported the SKU forecast to Excel for size/scale explosion
- Imported Adjusted Forecast back into DS
- Forecast by Style/Color, use RP to to plan at Style/Color/Size
  - Used Advanced BOM feature to manage size scale
  - User selects time periods to use to calculate size %s (example – 6 months Adjusted History)
- Advanced BOM “explosion” takes Style/Color forecast down to the SKU (style/color/size/ship-to) level of detail for RP



Advanced BOM Case Study: Tencate Protective Fabrics

- Replaced an Excel-based collaboration process with DS
- Aggregate SKU history to Planning Style Aggregate
- Generate statistical forecast at Planning Style level
- Sales reps collaborate to adjust forecast and budget through DS
- Aggregate Planning Style / Rep forecast to Style level for management review
- Two levels of Advanced BOM
  - Style to Planning Style
  - Planning Style to SKU
- SKY level forecast exported to ERP

TENCATE protectivefabrics

Advanced BOM Case Study – Siemens Healthineers

- Has 100,000 demand history records by country for about 9,000 items
- Individual SKU annual historical volumes by country range from 100 units to 100,000 units
- Advanced BOM used to statistically forecast at aggregate level and spread forecasts down to country level based on each country's share of the annual volume by item over the last 12 months of history

Advanced BOM Case Study: Retail Company

- Customer wants store level detail records available tied to a distribution center but also allow the distribution center record be capable of having forecast of demand generated from a upper hierarchy grouping such as family or group code level
- They do not want to statistically forecast at the store level record, but allow the demand projections at the distribution center to prorate to the store level based on forecasts adjusted at the product family level.
- 2 types of parent/child aggregation relationships need to be established.
  - The first type is the relationship of the distribution center record to the family group.
  - The second type accomplished with the 'advanced BOM option' which would use another type of aggregate this representing the relationship of the stores to the DC.
- Important that the correct sequence of steps is followed, by process, so that the end result delivers what is expected.


QUESTIONS?


THANK YOU