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Investigating a Materials Behavior
One of the things that used to drive me crazy as a manager was when an employee would tell me "We are always out of this part" and then provides no additional information.

So in this short article, we will go through a review on how to get more information about a part, and how to start getting thinking around problem solving in SAP. For most planners, this should take around three minutes for each part number.

Step One: Tell me the segments. What are its ABCXYZ and HIJ? You can get this from the MRP Monitor. Ideally you should have the segmentation available on some shared site so the planners can self-serve. If you don't have this, you can get close with MC.9. See my article "MC.9 and the Poor Man's Segmentation".

Step Two: What is the lead time (EFG)? If it is a very short lead time, being out of stock may not be convenient but also not a crisis. Longer lead times can be a much bigger issue (says Captain Obvious).

Step Three: Tell me the average usage and turns compared to other materials. Are they in line with other part numbers or do they seem abnormally high? If the average turns for the plant are 8, and an item is turning at 15 times, is it because it is stocking out?

Below is a real life example of a product that uses 1 each of 5 different components all from the same supplier. We build 40 each month. Lead time is the same on all five materials. From MC.9 we can see that one item is turning at 22.5 turns a year. A second one is turning almost 14 times a year, and the set is turning 8.3 times.

Material Analysis: Stock: Basic List

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No. of Material: 5

Material	ValStockValue	Valuated stock	AnValStkTrn-Val	Total usage
Total	901,763.59 USD	222 EA	8.30	2,526 EA
	551,337.57 USD	63 EA	6.44	509 EA
	2,773.66 USD	1 EA	13.65	499 EA
	176,398.02 USD	54 EA	7.70	496 EA
	76,918.50 USD	75 EA	6.35	527 EA
	94,335.84 USD	29 EA	22.48	495 EA

When we look at the ending inventory using the time series icon we can see we are often at zero or near zero on two items with the higher turns. These items are stocking out and trapping the other inventory.

Material	01/2017	02/2017	03/2017	04/2017	05/2017	06/2017	07/2017	08/2017	09/2017	10/2017	11/2017	12/2017	01/2018	Average
P/N A	37	47	31	40	53	118	123	122	133	116	63	55	63	77
P/N B	0	1	16	16	9	7	31	93	132	91	56	12	1	36
P/N C	37	41	10	14	25	4	70	66	123	154	137	75	54	62
P/N D	51	41	4	20	46	107	129	146	153	108	58	96	75	80
P/N E	16	57	41	25	34	21	0	1	0	6	16	14	29	20

Step Four: Look at MC48 stock level over time. If we are targeting one week on hand at all times, does the MC48 stock break that line frequently?

Here is an item we use 400 pieces a month of. The blue line (which I added) shows the monthly demand and the yellow lines shows weekly demand (which I also added). Every time we break the yellow we are basically stocked out, unable to release the next set of orders. Note the slope of the consumption line is always the same, so we know demand is steady, i.e. this is an X part.
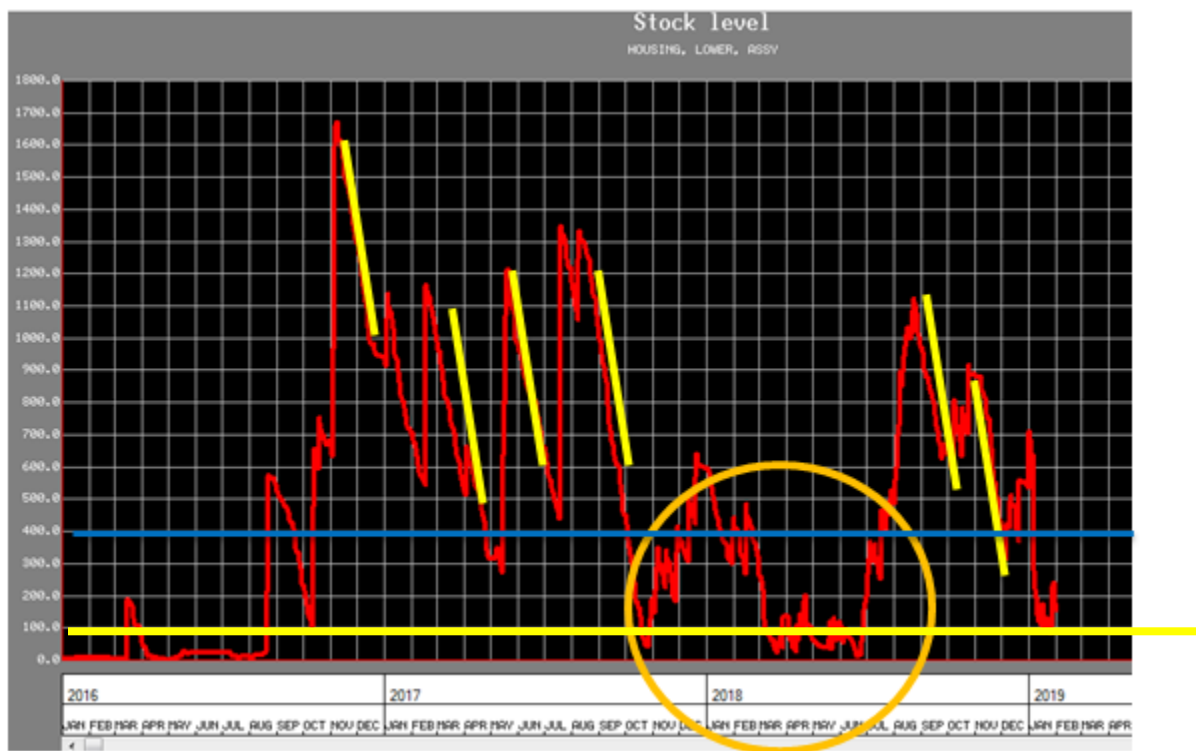
Step Five: What are the buffers? Do they make sense? If we are planning in weekly buckets, a one day buffer may not make sense. I have seen buffers of one day on items with 100 day lead times and never quite understood the point. The only a one day buffer is better than is no buffer at all.

Since the three ways to buffer are capacity, inventory, and time, we would look in the MARC table at things like safety stock, coverage profile, safety lead time, and lot size.

Step Six: look at the MD04 in weekly buckets. Is demand more stable than supply? If supply is less stable, is it because of a lot sizing rule we are following?

Below is an example where stable demand is translated into a more variable supply due to both a minimum lot size being set at 60 pieces and the coverage profile set to order a 20 days of forecast. If this is an issue (and it may not be) then you should try other combinations to smooth out the supply.

Individual List	Cross-Plant View				
Days	Weeks	Months			
A.. Period/segment		Plnd ind.req...	Requirement	Receipts	Avail.
W 33/2019		0	140-	0	
W 34/2019		0	150-	0	
W 35/2019		0	135-	420	
W 36/2019		0	136-	0	
W 37/2019		0	137-	0	
W 38/2019		0	137-	360	
W 39/2019		0	137-	0	
W 40/2019		0	137-	0	
W 41/2019		0	137-	360	
W 42/2019		0	137-	0	
W 43/2019		0	137-	360	
W 44/2019		0	145-	0	

So now we know a lot more about what is going on with the part, and can start developing solutions. Again, since this is about a three minute exercise, there should never be a conversation about "why are we always out" without a clear view of the part's behavior over time.