# How to build a workbook for planning and inventory analysis

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December 24, 2017

#### Purpose

The purpose of this is to either monthly or quarterly to create a workbook with which you can have information available for planning and inventory analysis.

You may have a tableau report or other tool created already, but I would still recommend you run through this exercise at least once to understand where a lot of our data resides.

#### Steps to build the workbook

Step 1 Forward looking forecast

We start by identifying parts you are interested in. In the following example we will work purchased parts with forecasted demand. Here we will use tcode Z\_MRP\_LIST.

Step 2: Backwards looking consumption

Run tcode MC.9 for the prior 12 months. This tells about inventory behaviors such as stock levels, turns by part number, consumption, usage frequency, etc.

Step 3: Materials master data Run MARC and/or MMUSERS. Here will get information on price, lot size, buffers, etc.

Step 4: Run MRP Monitor for segmentation. Key segments can vary, but we will always use ABC (financial valuation), XYZ (part variation) and HIJ (frequency of picks or usage).

# Forward looking forecast (mrp\_list)

MRP\_LIST is an extract of MRP by site and MRP Area. If I want to see what the external supply for an MRP Area, I populate Plant, MRP Area, MRP Elements LA, LE, BA, BE, procurement type "F" and date range and execute. It takes a little while to run, but I have run complex plants for three-year windows in less than an hour.

rt - specific selections			P Multiple Selection for
Material Number		to	Select Single Values
MRP Area		to	*
MRP Controller		to	
Planning Scenario		to	
MRP element	LA	to	BA BA
Receipt/issue indicator		to	BE
Req Date	11/09/2021	to 11/08/20	022 🛃
MRP date		to	
Profit center		to	
Planning/production plant		to	
Planning horizon			
Procurement Type	F	to	<b></b>
If you ru	in it without c	onstraining th	ne MRP

#### Output

My list default layout includes 52 elements, but you can make the listing smaller by changing the layout and saving it as something else. See highlighted icon.

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## Exporting MRP\_LIST

If you run MRP\_LIST and hit the first (excel) icon it will go into excel. If you select the second icon it will give you text file options.

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#### Text Extract

It looks like the first view when I run it and extract it. The second view is how it looks when I clean it up. To make analytics easier, I add year and month columns.

The columns in yellow are often the most interesting, also note even though I ran it by request, the MRP date is still available on the right side.

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# Using it for projecting monthly receipts

Adding cost to it allows you to use it for monthly inventory projections or allows you to quickly quantity the values of exceptions messages, by putting it into a pivot table.

STOs for GOS plants are included and are part of the BE MRP element.

If you get "crooked" numbers in specific when you sum it up, look for things like blanket orders (qty=999,999) and other oddities. To fin these numbers, I will take the quantities by month and convert them to \$, then I will graph the dollars by month. If you always bring in \$10 million in components but see a month in the future where you are bringing in \$110 million, you probably have a crooked number.

You may some formatting work to do depending on how you export it. And remember SAP does not always download parts numbers in the same format screen to screen so you often must fix that.

- MC.9 is a standard method of doing inventory analysis in SAP.
- Information on number of times an item is used, the quantity used, and the type of consumption (planned or unplanned) can be built into standard extracts.
- Questions that the standard inventory screens can help answer include:
- What is my consumption history?
- This can help you determine how many days/weeks/months on hand you have. It can help you determine you ABCXYZ based on usage.
- When did I last receive and item? When did I last consume and item?
- A last receipt or consumption long ago may indicate excess and potential obsolescence.
- What are my inventory turns? Days of Coverage based on consumption?

#### INVENTORY ANALYTICS

After making selections hit the execute button.

For items that get put to a stock location, MC.9 can help you determine the vitality and trends of your inventory.

You can run it by MRP controller, wide open by plant, or by any other maintained value listed on the selection screen.

MC.9 always defaults to the last 90 days for a date range, but you can modify that just by changing the date range.

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Period to Analyze			
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<ul> <li>Standard</li> <li>Std w/o Distrib.</li> <li>MaterialLedger Active</li> <li>Current Price</li> </ul>			

If this screen pops up, just hit the green check mark and move through it.

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#### INVENTORY ANALYTICS

This should bring you here

This is a very important Button that lets you add a lot of power to this view

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#### Material Analysis: Stock: Basic List

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No. of Material: 17475

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#### Now we have some information

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Keep this little icon in mind. When I click into a table field (step 1), and then click the icon (Step 2), the next slide shows up.

The field selected was the number of total usage (number of time an item was used, not the number of pieces used). If you recall when we ran this by MRP controller, we selected the date range 1/2016 to 5/2017. This now shows us all the total usages by month.

C Time series								
Key figure No. total usage 🖷								
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In the lower righthand corner is an export button so if you are doing an XYZ analysis, you can pull it into a spreadsheet for easier manipulation.

Click the little sideways arrow and the "Save List" pops up, and then select the green check mark and a location to save it.



- I am going to do the same thing for Total usage (which is the quantity used by month) and save that as well.
- Greencheck mark
- Select
   directory
- Name/Save file

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I can also export the higher-level current state snapshot. Note the export arrow is in the upper left corner for this one.

#### Platenal Analysis, Stock, Dasic List

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#### No. of Material: 608

Material	ValStockValue	Valuated stock	CnsgtStock	Last consumptn.	Last Receipt	No. total usage	Total usage
							60 PR
RBR52L10002BR	0.00 USD	0 EA	0 EA	01/15/2017	01/03/2016	2	69 EA
RBR52L63401BR	0.00 USD	0 EA	0 EA	10/23/2016	01/03/2016	1	11 EA
RBR54L12102BR	0.00 USD	0 EA	0 EA	09/19/2016	01/03/2016	1	136 EA
RBR54L15002BR	0.00 USD	0 EA	0 EA	09/28/2016	01/03/2016	1	23 EA
RBR54L20500FR	0.00 USD	0 EA	0 EA	09/28/2016	01/03/2016	1	18 EA
RBR54L243R0FR	0.00 USD	0 EA	0 EA	10/05/2016	01/03/2016	1	17 EA
RBR54L63401BR	2,833.20 USD	120 EA	0 EA	03/07/2017	03/06/2017	3	11 EA
RBR56L10000BR	0.00 USD	0 EA	0 EA	12/28/2016	07/30/2016	3	16 EA
RBR56L10002AR	0.00 USD	0 EA	0 EA	01/15/2017	01/03/2016	3	22 EA
RBR56L16201BR	0.00 USD	0 EA	0 EA	12/28/2016	12/23/2016	4	104 EA
RBR56L22101BR	0.00 USD	0 EA	0 EA	03/09/2017	03/09/2017	1	1 EA
RBR56L24301BR	220.05 USD	9 EA	0 EA		07/30/2016	0	0 EA
RBR56L30101BR	0.00 USD	0 EA	0 EA	11/03/2016	01/03/2016	1	14 EA
RBR56L42200BR	25.08 USD	1 EA	0 EA	10/31/2016	07/30/2016	2	24 EA
RBR56L51101BR	0.00 USD	0 EA	0 EA	12/28/2016	07/30/2016	3	157 EA

You may choose different defaults, these are the ones I typically use.

Note, when running analysis, I typically specify a 12-month date range as well.

After saving, if you want to add more dimensions, go ahead. As long as you don't save it, the default should stay the same.

k: Basic List	1 Select the dimensions
🛿 🚽 🖓 🛃 👘 🕹 👘 Top	
ValStockValue	Valuated stock AnTtStTn-V AvoRC TStk Tot. usage val
21,730,311.85 USD	Le Choose Key figures K
0.00 USD	T AI
70.72 USD	
0.00 USD	Selection criteria Pool
0.00 USD	Valuated Stock Value Anl.val.stktm-value
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0.00 USD	And still at later way as a second still at a slater of the se
0.00 USD	Annual to scocktum
638.00 USD	Avg. RC total stock 🛛 🙀 Annual val.stockturn
0.00 USD	Total usage value
USD	TOTAL CONTRACTOR AND A
0.00 USD	
124.68 USD	No.val.stock zero Arg InTurnQty- ValSt
21.41 USD	No. total usage A g. ttl usage value
0.77 USD	Avo, unplanned usage
0.00 USD	
0.00 USD	Avg.crisgt.coverage
0.00 USD	<ul> <li>Avg.cvg.tt.stk-value</li> </ul>
0 00 000	tk-value 🖛
1 2 L	Ise the little buttons to select or
25	
1 dese	elect the dimensions you want.
1,124	
214.92 USD	Maximum number 30
9.10 USD	
0.00 USD	
200.75 USD	
	ValStockValue           ValStockValue           21,730,311.65         USD           0.00         USD

# MC.9

- Valuated Stock Value is the value in the currency your plant uses, by part number.
- Valuated Stock is the quantity by part number.
- Annual Total Stock Turn Value is the turns by part number for the year.
- Average Range of Coverage is the number of days of the FORECAST covered (does not include past due).
- Total Usage Value is the value of the materials consumed in plant currency.
- Total consumption is the consumption quantity.
- Number of times the stock went to zero is the number of times an SAP location went to zero units.
- Number of total usage is the number of times a part was used (regardless of the number of pieces used each time).



## MC.9

To save the key dimensions you like, so when you come back to MC.9 view you want, go to "Settings" and select save settings.

	_	ounue	5				Comments	_				UIA	s neip		
-F	¢	Material Analysis	<u>E</u> dit	<u>G</u> oto	Vjew	Extr <u>a</u> s	<u>S</u> ettings	S <u>v</u> ste	m	<u>H</u> elp					
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	Т	otal				21,7	30,311.85	USD		508,379.	225	***	12.45	25	65
	0	646C624-18					0.00	USD			0	EA	99,999.00	0	
	M	S21209C0815L					70.72	USD			197	EA	0.00	99,999	
	M	S24693S26					0.00	USD			0	EA	99,999.00	0	
	M	539086-125					0.00	USD			0	EA	0.00	0	
	M	530086-126					0.00	TISD			0	FA	aa aaa nn	0	

#### MARC Table

The MARC table is one of the key tables for understanding the Materials Master. Information includes:

- Lot sizes
- Minimum Order quantity
- Plan type
- Buffer information (Safety stock, Safety Lead time, Coverage profiles)
- And a whole lot more....

The information is specific to plants and MRP Areas.

THE INFORMATION IS FROM YESTERDAY. It is not live at this moment.

### Accessing the MARC Table

 I have mine saved to favorites so I can just double click on it.



## Running the Report

You can run it wide open for the whole plant or MRP Area, or you can just do a set of parts.

To do a set of parts:

- (1)Enter the plant.
- (2)Click on the drop down to open a new tile.
- (3)Take your part list and click into the first space(4)Then hit the clip board(5)Then check the green arrow



#### That should bring you back here. Now hit the green check mark with the clock in the left-hand corner.

	1		
MARC Table			
<b>₽</b>			
Report-specific selections			
Material Number	1722470	to	
Plant	2732 🔍	to	<b></b>
Required QM System for Ve		to	<b></b>
MRP Group		to	<b></b>
Issue Storage Location		to	<b></b>
Profit Center		to	<b></b>
Chadring Crown for Availa		+n 🗌	

#### Now we are here.

To export, select the export option and select spreadsheet.

Sometimes it exports quickly, other times it takes few minutes.

MARCI	able																	
							-		2.0770									
MARC Ta	ble		1				,											
Material	Pint	* Maint, status Pl	Vak	Cat B	MS	Valid from	ABC Cri	PGr	UoI MRPpr	Тур	MRPC	M=B	PDT	EGRT	PI	IA.scrap	LS	ProcType
1000988-1	2732	DEALBYPQG	111		T	00/00/0000	C	5YX		PD	5XX		91	2	M	0.00	YY	F
1703116		DEALBYPQG	6			00/00/0000	A	SYX		PD	ZVC		112	2	м	0.00	YE	F
1703373		DEALBYPQG				00/00/0000	C	5YX		PD	2VC		112	2	Μ.	0.00	¥3	F
1708505-2		DEALBVPQG	0			00/00/0000	C	5YX		PD	ZVC		70	2	м	0.00	YK	F
1708505-3 -		- DEALEVPQG -				00/00/0000 -	- c	SYX		PD	440-		- 70-	2-	M-	0.00	73	p
1708505-4		DEALBVPQG				00/00/0000	C	SYX		PD	4AU		70	2	M	0.00	¥3	F
1708598		DEALBVPQG				00/00/0000	с	5YX		PD	2VC		84	2	M	0.00	¥3	F
1708762-10		DEALBVPQG				00/00/0000	C	5YX		PD	2VC		90	2	M	0.00	YK	F
1708762-11		DEALBVPQG				00/00/0000	с	5YX		PD	2VC		90	2	Μ.	0.00	EX	F
1708762-6		DEALBVPQG			81	00/00/0000	в	5YX		PD	INB		80	2	м	0.00	EX	F
1712398		DEALBVPQG				00/00/0000	A	5YX		PD	2VC		126	2	M	0.00	YE	F
1712400		DEALBVPQG				00/00/0000	в	5YX		PD	2VC		112	2	м	0.00	YK	F
1712402		DEALBVPQG				00/00/0000	в	5YX		PD	2VC		112	2	Μ.	0.00	YK.	F
1712405		DEALBVPQG				00/00/0000	A	482		PD	SXX		147	2	м	0.00	YK	F
1714124		DEALBVPQG				00/00/0000	A	5YX		PD	ZVA		84	2	м	0.00	YE	F
1715024		DEALBVPQG				00/00/0000	C	482		PD	2VC		84	2	м	0.00	YY	F
1715032		DEALBVPQG				00/00/0000	С	5YX		PD	2VC		84	2	M	0.00	Y3	F
1715874		DEALBVPQG	1			00/00/0000	A	5YX		PD	2VC		89	2	м	0.00	EX	F
1722021		DEALBVPQG				00/00/0000	A	482		PD	2VC		112	2	м	0.00	YE	F
1722464-1		DEALBVPQG				00/00/0000	C	5YX		PD	482		70	2	м	0.00	¥3	F
1722464-10		DEALBVPQG				00/00/0000	с	482		PD	INB		70	2	м	0.00	EX	F
1722464-11		VEDPALQBG	1			00/00/0000	С	5YX		PD	4AU		100	2	м	0.00	¥3	F
		and a second					1.				7			-	1		11.00	-

#### Now we are here.

It will want to go to your SAP GUI but I prefer to send it to me desktop.

Name it and I highly recommend assigning a date to help you know when you pulled it.

Remember this is yesterday's snap-shot, not live this minute.



Two variations of this will pop up, select allow both times. On some set ups, if you select remember my decision it will stop popping up. It might also warn you the file is going to pop up in a different format and just approve/agree.

	SAP GUI Security
n	The system is trying to create the file
nx nx	C:\Users\stantoex\Desktop\April IE Reports\Hycomp MARC April 30.xls
n	in the directory
n X	C:\Users\stantoex\Desktop\April IE Reports\
rx rX	Do you want to grant the permission to modify the parent directory and all its subdirector
rx	
X	Remember My Decision
nx	Allow Deny
32	

This is a big file. One thing you could do with it is validate your lot sizing is standardized.

To do this I would add a filter and go over to column U and just look to see how many I had. I would also do this on other filed. Note the min, the max, rounding values, etc. are all grouped together in the table.



#### **Understanding Lot Size**

Go to the materials master for one part. (1) Go to MRP 1 tab (2) Click on the toggle next to lot size. It will show up when you click in it.

(3) This should pop up.

Remember these values are in workdays so 5 days = 1 week.

POS=10 means ten days, or two weeks.

•	81000	18	69 (	614	20	1.6.1	£)		
Display Materia	1 1708505-2 (5	Separ	abl	e As	m; :	Sem	ni-Fn	shd)	
Additional Data 🛛 💑 Org. Levels		Plot	size ()	material	s plan	ning)	108 Ent	Ties	
Purchase order text	RP 1 RP 2	ES L	S LI	Pds	LLP	LLI	LPer	Description	
1		WS P	T	15	P	м	1	POS+15	
sterial 170850		146 P	T	16	P.	M	1	P05=16	
ant 2732	PRO 3PL Mecha	W7 P	1.	17	P	M	1	P05=17	
Ger D		W9 P	1÷	19	P	M	1	P05=19	
		WB P	W	1	P	M	1	Weekly lot size	
ana and Data		WI O	W.	0	1		0	Least unit cost procedure	
eneral Laca		X4 P	T	55			0	POS=SS	
ase Unit of Measure EA	each	X6 P	E.	75			0	P05=75	-
urchasing group 5YX	i	X8 P	14	115			0	P05=115 P05=240	
lant-so mati status	1	Y2 P	1÷	140			0	P05=140	
		Y3 P	T.	20			0	POS = 20 through Horizon	
22 AU		YA P	T	1			0	POS=1 thru horizon	
RP procedure		YS P	T	2			0	POS=2 thru horizon	
RP Type PD	MRP	YC P	15	-			0	POS=3 thru horizon	
eorder Point 0		YD P	14	3			0	POS=4 thru horizon	
farming oude	2	VE D	14	-			0	POS=5 thru horizon	
arring croc	2	YG P	T	7			0	POS=7 thru horizon	
		YH P	T	8			0	POS=8 thru horizon	
ot size data		Y3 P	T	9			0	POS=9 thru horizon	
ot size YK	POS=10 thru horiz	YK P	T	10			0	POS=10 thru horizon	
formum Lot Size		YM P	1	11			0	POS-11 thru hotzon	
		YP P	1÷	12			0	POS=13 thru horizon	
	Anna	YO P	T	14			0	POS=14 thru horizon	
ssembly scrap (%) 0.00		YR P	T	15			0	POS=15 thru horizon	
Jounding Profile		YS P	T	16			0	POS=16 thru horizon	
init of Measure Gro	i l	YT P	T	17			0	POS=17 thru horizon	
	t <sup>1</sup>	YUP	I	18			0	POS-18 thru horizon	
		TV P	17	19			0	POS-19 thru horizon	
RP areas	1	THE P	14	21			0	POS = 21 UNFU NOF120N	

## Finding Price - MMUSERS

MMUSERS is a table with quite a bit of information in it, much of it from other tables such as MARC, MARA.

I use this to get standard cost.

After selecting the tcode, go populate the plant and execute.

#### SAP Easy Access 🕼 🖙 🧽 🎋 🎋 🖉 🔻 🔺 Favorites MCPU - Production Order Analysis: Lead Time Y MCPW - Material analysis: Lead time ZSD MARC - MARC Table ZSC MMUSERS - Material Master Users ZSU01D - Userid-Name XREF T Z MRP LIST - MRP List TZPPWIP - WIP production orders TMMCHANGEDOC - Display Material Change Documents TCEWB - PP: Engineering Workbench Y MCBE - INVCO: Material Analysis Selection MCPQ - Work center analysis: Quantities COOIS - Production Order Information System SAP Add On Tools Strategic Planner TCodes MMUSERS



#### MMUSERS

Once here select change layout from the layout icon.

Now from column selection select standard price and pricing unit and click the small sideways triangles to bring them over.

This is important because we do not always price/cost in pieces. We often may buy 100 pieces at a time, and the price is for the 100 pieces, not one piece.



#### MMUSERS

We should be able to export this now and have the price and pricing units available for the workbook. To get the piece price divide the standard price by the pricing unit.

NOTE: this information, other than price, should have all the information from MARC, so you could just use this. Typically, though price only changes once a year, so I run this once or twice a year, but the MARC every month. This is not necessarily the best way to do it.

Er Report Edit Goto System Help														×			
	<u>d</u> oto System <u>H</u> eip																-
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MMUGEDG																	
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Material	Material Description	word processin	ig	BMR	Profl.	Access Control	I L/O	PInt	Cage Code	Critical Category Code Pro	. GrPMt	Matl group	Basic Material	Clt Pl	per	EStandard Price	
MS20365-440A	NUT	<u>L</u> ocal File	ł			GBL000000	INT	2735	STDPN	N	NORM	012AC			100	14.72	
MS20365-632A	NUT	<u>S</u> end				GBL000000	INT	2735	STDPN	N	NORM	012AC			100	25.20	Ŧ
MS20426A2-3	RIVET,SOLID,CSKH,.062X.18	SAPoffice Folde	ars -			GBL000000	INT	2735	STDPN	N	NORM	012AD			100	1.10	
MS20426AD2-4	RIVET					GBL000000	INT	2735	63367	N	NORM	012AD			100	0.48	
MS20426B2-3	RIVET, FLUSH	ABC Analys.				GBL000000	INT	2735	STDPN	N	NORM	012AD			100	4.19	
MS20470A3-4	RIVET,SOLID,UNIVERSAL HD	<u>H</u> TML downloa	d [			GBL000000	INT	2735	STDPN	N	NORM	012AD			100	1.06	
MS20470AD3-3-5	RIVET		Z019 CIVL			GBL000000	INT	2735	STDPN	N	NORM	012AD			100	1.06	
34999	GEAR,SUN-STAGE 2	Z004 CIVL			GBL000000	INT	2735	31645	N	NORM	011CX			1			
11239-1	SMART MOTOR CTRL	Z004 CIVL			GBL000000	INT	2735	31645	N	NORM	013DB			1			
MS21069L06	NUT	NUT Z019 CI				GBL000000	INT	2735	STDPN	N	NORM	012AC			100	43.80	
MS21083C08	NUT,HEX,164-32,.187,SST,LK	G	Z019 CIVL			GBL000000	INT	2735	STDPN	N	NORM	012AC			100	29.11	
															1.00		

### Putting the workbook together

Starting with the MRP list, I put the part numbers in the first column then will typically put demand in monthly buckets for 12 months out.

To do this I open the file, remove columns I do not need and then add month and year columns so I can work it into a pivot table.

Year	Month	Req Date	MRP Elem	Rec./req	Date	St / RelDate	Material	Material E Bunit	Plnt	MRP Area	Name	PS	c MRP date
2022	4	4/13/2022	BE	6	4/13/2022		36218	STUD,FLANGED	2735		PRO Electi	ronics	1/1/2022
2022	11	11/11/2022	BA	2	11/11/2022	7/12/2022	36218	STUD,FLANGED	2735		PRO Electi	ronics	1/1/2022
2023	1	1/11/2023	BA	1	1/11/2023	9/12/2022	36218	STUD,FLANGED	2735		PRO Electi	ronics	1/1/2022
2023	2	2/15/2023	BA	2	2/15/2023	10/17/2022	36218	STUD,FLANGED	2735		PRO Electi	ronics	1/1/2022
2023	4	4/13/2023	BA	1	4/13/2023	12/8/2022	36218	STUD,FLANGED	2735		PRO Elect	ronics	1/1/2022
2023	5	5/16/2023	BA	2	5/16/2023	1/13/2023	36218	STUD,FLANGED	2735		PRO Elect	ronics	1/1/2022
2023	7	7/11/2023	BA	1	7/11/2023	3/10/2023	36218	STUD,FLANGED	2735		PRO Electi	ronics	1/1/2022
2023	8	8/15/2023	BA	1	8/15/2023	4/14/2023	36218	STUD,FLANGED	2735		PRO Electi	ronics	1/1/2022
2023	10	10/11/2023	BA	1	10/11/2023	6/12/2023	36218	STUD,FLANGED	2735		PRO Elect	ronics	1/1/2022
2023	9	9/13/2023	BA	1	9/13/2023	5/12/2023	36218	STUD,FLANGED	2735		PRO Electi	ronics	1/1/2022
2023	11	11/13/2023	BA	2	11/13/2023	7/13/2023	36218	STUD,FLANGED	2735		PRO Elect	ronics	1/1/2022
2024	1	1/10/2024	BA	1	1/10/2024	9/11/2023	36218	STUD,FLANGED	2735		PRO Electi	ronics	1/1/2022
2024	2	2/14/2024	BA	2	2/14/2024	10/16/2023	36218	STUD,FLANGED	2735		PRO Elect	ronics	1/1/2022

### Putting the workbook together

Once the data is moved into a pivot, I can see the quantity required by part number for the next 12 months. You can pivot it into different formats to see different buckets if you want to. Do a copy past special to make it an excel work book and then go get more information.

			-	-	-	_		-		•	-				•
1															
2															
3	Sum of Rec./req	d.qty C	Column Labels 💌			_									
4			<b>= 2022</b>											2022 To	ota
5	Row Labels	-	1	2	3	4	5	6	7	8	3 9	10	11	12	
6	29103														
7	29562			93											
8	29762			70											
9	29764														
0	32155		330												
1	32764				31			20	16	20	)	16	12	16	
2	32906													32	
3	32945		37								32			4	
4	32946			32						33	3			15	
5	32950			20	20		20	20	20		20	20		20	
6	32960					100							100		
7	33787														

# Next import the segmentation, usage history, price, and buffers

- Using the MRP monitor I will bring in the ABCXYZ and ABCHIJ (Orange).
- Using the MMUSERS report I will bring in standard price (no color).
- MARC give us the lot size, and information on things like minimum order quantities, rounding values, and buffers (yellow). This is also in MMUSERS.
- MC.9 gets us the historical usage information (blue).

Material	ABCXYZ	ABCHIJ	Тур	LS	Safety Stock	Min. Lot Sze	Rounding val.	Max. level	Planning time	Prof.	SafetyTime	Safety	Piece						12	2 month
									tence			Stck	Price						10	otal
															Voluctod	Tot upogo	Total	NoTotl loo	A oT+S+To	RP
														ValStockValue	stock	val	USade	norotosa	Anniorn-	
29	03 CZ	C.I	PD	Y3	0.000	141 000	0.000	0.000	0		25	0	24.01	\$ 840	35	\$ 624	2F	90 7	0.45	88
29	62 CZ	CJ	PD	EX	0.000	152,000	0.000	0.000	0		0	0	22.36	\$ -	0	\$ 402	18	7	2.22	93
32	55 CY	CJ	PD	YZ	0.000	0.000	165.000	0.000	0		0	0	3.2303	\$ -	0	\$ 194	60	6	4.14	317
32	764 CY	CJ	PD	Y3	0.000	0.000	0.000	0.000	0		20	0	9.88	\$ 692	70	\$ 1,166	118	33	2.69	136
32	906 CZ	CJ	P1	YK	0.000	0.000	0.000	0.000	5		0	0	7.08	\$ 312	44	\$ 262	37	11	0.78	44
32	945 CY	CJ	PD	YK	0.000	0.000	0.000	0.000	0		0	0	85.41	\$ 1,110	13	\$ 3,331	39	12	2.87	75
32	946 CY	CJ	PD	YK	0.000	0.000	0.000	0.000	0		0	0	106.22	\$ 1,275	12	\$ 4,143	39	12	2.46	77
32	950 CX	CJ	PD	Y3	0.000	20.000	20.000	0.000	0		25	0	18.07	\$ 614	34	\$ 2,385	132	33	9.3	131
32	960 CY	CJ	PD	ΥZ	0.000	100.000	100.000	0.000	0		0	0	4.38	\$ 600	137	\$ 517	118	33	1.98	100
33	787 BZ	BJ	PD	ΥZ	0.000	0.000	0.000	0.000	0		0	0	687.31	\$ 1,375	2	\$ 10,996	18	5	3.15	18
34	329 BY	BJ	PD	YK	0.000	85.000	0.000	0.000	0		15	0	44.24	\$ 3,318	75	\$ 15,050	353	47	3.38	85
34	350 CY	CI	PD	Y3	0.000	250.000	250.000	0.000	0		20	0	4.38	\$ 1,086	248	\$ 1,428	326	112	1.16	250
34	480 BX	BI	PD	Y3	0.000	0.000	10.000	0.000	0		25	0	10.95	\$ 2,310	211	\$ 5,672	518	114	3.76	610
34	672 CZ	CJ	PD	EX	0.000	23.000	0.000	0.000	0		0	0	150.65	\$ 1,055	7	\$ 1,205	8	3	0.65	23
34	742 CZ	CJ	PD	ΥZ	0.000	25.000	0.000	0.000	0		Ó	0	438	\$ 1,314	3	\$ 876	2	1	0.52	3
34	324 CZ	CJ	PD	ΥZ	0.000	0.000	0.000	0.000	0		15	0	236.72	\$-	0	\$ 517	3	2	153.46	4
34	927 CZ	CJ	PD	Y3	0.000	0.000	0.000	0.000	0		Ó	0	547.5	\$-	0	\$ 68	1	1	6.41	6
35	67 CZ	CJ	P1	ΥZ	0.000	0.000	0.000	0.000	5		0	0	16.7	\$ 33	2	\$ 33	2	1	1.6	4
36	217 CZ	CJ	PD	EX	0.000	0.000	0.000	0.000	0		0	0	465.38	\$-	0	\$ 2,792	6	2	5.13	10
36	218 CY	CJ	PD	Y3	0.000	0.000	0.000	0.000	0		30	0	193.27	\$ 580	3	\$ 3,439	18	11	6.58	17
36	219 CY	CJ	PD	YK	0.000	2.000	2.000	0.000	0		15	0	254.07	\$ 9,147	36	\$ 4,573	18	18	0.67	32
36	222 BY	BJ	PD	YK	0.000	0.000	1.000	0.000	0		15	0	216.1	\$ 4,322	20	\$ 5,835	27	10	2.98	37
36	223 BY	BJ	PD	YK	0.000	0.000	1.000	0.000	0		15	0	216.1	\$ 4,970	23	\$ 5,835	27	10	2.19	33
36	350 CY	CJ	PD	YK	0.000	229.000	0.000	0.000	0		10	0	3.6026	\$ 1,174	326	\$ 3,419	949	36	2.19	1374
36	474 CY	CJ	PD	Y3	0.000	30.000	0.000	0.000	0		25	0	97.37	\$ 2,337	24	\$ 4,284	44	11	3.17	30
36	647 CY	CJ	PD	Y3	0.000	0.000	17.000	0.000	0		25	0	15.88	\$ 127	8	\$ 889	56	14	4.43	51
36	657 BY	BJ	P1	Y3	0.000	8.000	4.000	0.000	5		25	0	96.85	\$-	0	\$ 5,424	56	14	9.97	48

#### Now What?

We will need to add more columns based on the detail we have, but we will need a nine block either way.

Things you might be interested in doing:

- Add a column dividing the 12 month Forecast against consumption history. Is forecast increasing or decreasing compared to consumption history?
- How are your buffers set?
- What segment is holding all your money. Why don't we care about inventory \$ in some segments, such as the CH segment?
- What are your turns? Are high turns a good thing or a bad thing?

Calculated columns I like to add:

- 12 month forecast divided by 12-month consumption
- Average daily forecast
- Buffer units and value (this might take a couple of columns)

#### The Nine Block

Consider:

- % of part numbers in each segment
- Frequency of usage/# of times used by segment
- % of total usage value (consumption history)

What does each segment look like?

	_		_			
	Count of		Sum of	% of		% of
	Material	% of	NoTotUsa	Times	Sum of Tot.	Usage
Row Labels	Number	Parts #'s	ge	Used	usage val.	Value
AH	232	2%	268,293	22%	\$20,399,697	17%
AI	521	4%	58,039	5%	\$52,370,200	43%
AJ	661	6%	16,417	1%	\$31,877,027	26%
BH	189	2%	153,027	12%	\$1,472,550	1.2%
BI	325	3%	37,555	3%	\$2,617,550	2.1%
BJ	973	8%	17,556	1%	\$7,941,710	6.5%
CH	535	5%	438,206	36%	\$568,926	0.5%
CI	1,351	12%	146,315	12%	\$1,234,757	1.0%
CJ	6,865	59%	91,465	7%	\$4,571,427	3.7%
Grand Total	11,652	100%	1,226,873	100%	\$123,053,843	100%

#### Nine Block

What can I tell about my buffer cost? Do I see a standard approach by segment?

And what is my MOQ doing to my inventory costs?

What are my turns by segment?

	Count of	0/	Sum of	% of	% of	Sum of		Average	MOQ	
	Material	% Of	NolotUsa	Times	Usage	Cost of	Butter in	of LS in	cost in	
Row Labels	Number	Parts #'s	ge	Used	Value	Buffer	Days of FC	Days	days	Turns
AH	232	2%	268,293	22%	17%	\$1,207,950	14	7	9	2.11
AI	521	4%	58,039	5%	43%	\$1,951,280	8	7	24	2.04
AJ	661	6%	16,417	1%	26%	\$1,548,856	9	7	36	1.72
BH	189	2%	153,027	12%	1.2%	\$268,718	37	10	46	1.23
BI	325	3%	37,555	3%	2.1%	\$215,911	14	13	67	1.28
BJ	973	8%	17,556	1%	6.5%	\$728,496	14	13	86	0.96
СН	535	5%	438,206	36%	0.5%	\$157,733	49	20	81	0.91
CI	1,351	12%	146,315	12%	1.0%	\$210,752	30	20	200	0.76
CJ	6,865	59%	91,465	7%	3.7%	\$696,148	24	19	365	0.35
Grand Total	11,652	100%	1,226,873	100%	100%	\$6,985,843	11	17	50	1.53

#### At a part number level

Comparing forecasted demand with historical consumption can give you insight into what part numbers are growing, or declining.

Can your supplier support the growth or decline? Should other SAP parameters, such as safety stock, be reviewed?

You could also use it for a supplier SIOP process.

		Avg Daily FC	AVG Daily FC in \$	Avg Daily Consumpt ion	FC compared to Usage
Material Number 🛛 📑	Material Description	-		-	-
1024408-0001	MICROCIRCUIT - HYBRID, LVDT SIGNAL CONDI	18.296	\$11,570.39	19.40	94%
4P8061-259-0001	MICROCIRCUIT, 208 PIN FPGA, FL	19.88	\$ 8,866.08	6.95	286%
819279-2	TRANSDUCER, PRESSURE	8.976	\$ 3,895.94	7.06	127%
1016734-1	OSCILLATOR, LOW VOLTAGE, GULL-	22.212	\$ 2,917.55	9.78	227%
4P8061-314-0001	MICROCIRCUIT, 3.3V, FPGA, 450,	21.576	\$ 2,637.02	7.20	300%
93026-48KS	CAPACITOR	66.736	\$ 2,082.16	44.37	150%
813249-1	INDUCTOR, POWER	53.448	\$ 1,988.27	15.92	336%
5917375-1	DC-DC, QUAD, 3.3/5/15/-15V,35W	8.292	\$ 1,640.82	9.85	84%
CDR33BX104AKWS	CAP, FIXED, CHIP CERM, BX, 1UF 10%,50V	4385.828	\$ 1,570.13	3,226.75	136%

# Analyzing a segment: CX Parts

C items are low value materials that make up 5% to 10% of your inventory value (depending on how you set it). Typically, there are many materials that make up the low value 5% segment.

X Items are materials with low variation, and therefore more predictable, often due to steady usage.

CX items are worth looking at for opportunities to:

- Avoid a low value stock out that prevents us from shipping high value products.
- Reduce transactional costs by ordering larger lot sizes.

#### **CX** Parts

Information that helps with analytics is available in a number of areas, with MC.9 being a primary source for good historical information on transactions and inventory levels.

#### Good dimensions to review for improvement:

- Inventory and Inventory Value.
- Number of total usage (how many times did an item get used/issued, regardless of the number of pieces in the usage).
- Average Range of Coverage in Days.
- Average Value of Stock Receipts (number of pieces in each receipt).
- Number of stock receipts (the number of times an item was received).
- Total Usage (Number of pieces used)

#### **Common Buffers**

Buffers can be any SAP Parameter that may cause you to hold more material than the MRP requires. The ones most commonly used at UTAS are listed below.

Lot Size

- If an item is low value and is being received two to three times a week, you may want to increase lot size or period of supply to reduce transactions.
- Higher lot sizes will also reduce the risk of stock outs by creating a bigger days range of coverage.
- Lot size changes can be either a fixed lot quantity, or a range of coverage. If a common item comes in a common container, often it is easiest to set the fixed lot size to the container quantity.

Safety Stock and Safety Time

- A static Safety stock causes MRP to want to maintain an inventory to at least that level.
- Safety time causes MRP to move the receipt or stock date for a requirement forward in MRP. It does not change the requirement date, just the date components are to be received.

#### **Common Buffers**

Range of Coverage (in Days)

- This is a dynamic safety stock n that the quantity the system wants to hold in inventory changes based on the forward looking requirements.
- You must have forward requirements for this to work.
- You should look at historical consumption and validate that it lines up with future requirements, or understand why it does not, to effectively use this.

### MC.9 Inventory Analytics

To do an analysis on CX items, I used an SAP extract and added some calculated cells in Excel.

Below is an extract of MC.9.

- The yellow headers are SAP extracts, the grey are columns that I added and had some calculations done on.
- The data is based on a 12 month period.

1	A	B	С	D	E	F	G	Н	1	J	K	L	М	N	0
											Avg				Inv
		ValStockV	1	Valuated		No. total	Avg. RC	AvgValSto			Monthly	<b>NoValSto</b>	No.val stk	Short to	Coverage I
1	Material	alue 👻	·	✓ stock ✓	*	usage 👻	ttl stk 👻	ckRecs -		👻 Total usa( 🗸	Usage 👻	ckZero 👻	rcpt 斗	usage 💌	in Days 👻
2	AMS5659-070TESTPIECE	160.8	B PLN	3	EA	160	30	1.867	EA	161	13	43	226	26.88%	4
3	AMS5659-072TESTPIECE	98.94	1 PLN	3	EA	145	190	2.188	EA	142	12	31	154	21.38%	5
4	AMS5659-090TESTPIECE	621.46	6 PLN	7	EA	77	42	1.616	EA	75	6	29	125	37.66%	22
5	788086-12	1,401.44	1 PLN	19	EA	350	28	8.688	EA	350	29	23	77	6.57%	13
6	788085-9	1,930.18	B PLN	17	EA	186	35	4.767	EA	186	16	23	73	12.37%	22
7	AS3510-0215K	3,918.00	PLN	600	EA	811	34	123.306	EA	3,426	286	59	72	7.27%	42
8	812946-7	304.5	5 PLN	64	EA	890	33	119.029	EA	4,023	335	47	69	5.28%	4
9	MS24665-1010	1.62	2 PLN	36	EA	230	75	6.147	EA	229	19	30	68	13.04%	38
10	1001359-1	410.66	B PLN	2	EA	120	35	3.477	EA	119	10	21	65	17.50%	4
11	0711526-210	4,918.83	B PLN	177	EA	938	47	31.452	EA	938	78	27	62	2.88%	45
12	85053-82	16,441.00	PLN	164	EA	204	143	18.15	EA	198	17	5	60	2.45%	199
13	NAS1130-3L20D	1,673.85	5 PLN	2,198	EA	167	121	382.586	EA	6,239	520	2	58	1.20%	85
14	MS24665-82	20.56	B PLN	318	EA	2,299	67	111.389	EA	3,078	257	30	54	1.30%	25
15	MS27488-20	35.7	7 PLN	340	EA	690	81	82.296	EA	1,620	135	29	54	4.20%	50
16	NAS1102E08-8	248.6	B PLN	216	EA	298	73	41.245	EA	1,176	98	24	53	8.05%	44
17	83841-82	4,730.93	B PLN	1,524	EA	6,632	82	348.943	EA	6,839	570	20	53	0.30%	53
18	NAS1130-3L15	499.92	2 PLN	718	EA	129	88	187.692	EA	4,517	376	11	52	8.53%	38
19	ASP6YELLOW	3,765.51	<b>PLN</b>	973	EA	27	4,115	38.25	EA	27	2	2	52	7.41%	8649
20	1001354-1	406.8	B PLN	2	EA	120	35	3.941	EA	119	10	23	51	19.17%	4

#### How to Approach the Analytics

Start with a review of items that are frequent service offenders.. Step one is to add a column called "Short to Usage". Here I am going to divide the number of times the item went to zero by the number of times it was used. While this does not capture shortages to all requirements, it is a place to start when trying to identify problem parts.

					1 1					-			1	
1	A	B C	D E	F	G	H	1	J	K /	L	M	N	0	l
1	Material	ValStockV	Valuated stock	No. total Ave		AvgValSto ckRecs +		Total usar -	Avg Monthly Usage	NoValSto ckZero -	No val stk	Short to usage	Inv Coverage I in Days -	
2	83841-82	4,730,93 PLN	1,524 EA	6,632	82	348.943 EA		6,839	510	20	/ 5	3 0.30%	53	ĺ
3	NAS1149CN432R	123,07 PLN	2,661 EA	5,648	93	698.761 EA		24,035	2003	25	4	0.44%	27	
4	NAS620A10	268,53 PLN	4,079 EA	5,827	116	1,740.90 EA		32,893	2741	23	2	0.41%	30	
5	MS16632-4025	448,66 PLN	889 EA	5,565	108	211.722 EA		5,502	459	16	3	6 0.29%	39	
6	LC026CD11S316	4,070,15 PLN	802 EA	5,563	142	328.612 EA		5,474	456	12	45	9 0.22%	35	
7	81625-82	4,871,45 PLN	1,480 EA	5,563	100	397.355 EA		5,499	458	11	3	0.20%	65	
8	SSR-0112	1,109,62 PLN	807 EA	5,558	100	520.441 EA		6,670	556	7	3	4 0.13%	29	
9	80923-82	3,698,24 PLN	1,456 EA	5,554	125	607.867 EA		5,563	464	6	3	0.11%	63	
10	MS24665-18	197,29 PLN	4,905 EA	4,952	80	697.977 EA		9,770	814	21	4	3 0.42%	120	
11	732249-6	1,521,17 PLN	611 EA	4,472	61	303.316 EA		5,757	480	23	3	8 0.51%	25	
12	NAS620C8L	183.96 PLN	4,672 EA	4,096	63	1,996.93 EA		42,274	3523	28	4	5 0.68%	27	
13	69494J10	933,55 PLN	523 EA	3,917	65	591.067 EA		5,173	431	12	1	5 0.31%	24	
14	NAS620C3	24.67 PLN	713 EA	3,777	106	223 EA		4,221	352	28	46	6 0.74%	41	
15	69494J11	1,949.27 PLN	1,041 EA	3,608	58	651.762 EA		6,737	561	17	2	0.47%	37	
16	NAS620C10L	614.2 PLN	15,286 EA	3,419	148	1,656.29 EA		21,799	1817	21	43	2 0.61%	168	
17	NAS1352N08-14	1,962,01 PLN	1,043 EA	3,265	76	525.216 EA		10,035	\$36	21	3	7 0.64%	25	

### Analysis

In general you want to minimize shortages on CX parts so you can manage them less, to resource and manage other higher value items more.

Looking at frequently used materials that stock out often is a good place to start.

4   A	B; C	DE	· F		Ģ	н	1	J	K	L	М	Ŋ
									Avg			
	ValStockV	Valuated	No. tot	al A	wg. RC	AvgValSto			Monthly	NoValSto	No.val stk	Short-to
Material	v alue v	✓ Stock ✓	<ul> <li>usage</li> </ul>	t	ti stķ 🔻	CKRecs -	*	l otal usa(	Usage 👻	ckZero -	rcpt 👻	usage
9 753665-1	569.24 PLN	14 EA		186	70	10.167 EA		185	15	14	24	7,539
0 1001356-1	40.16 PLN	2 EA		120	46	10.118 EA		119	10	9	17	7,509
1 ASP6YELLOW	3,765.51 PLN	973 EA		27	4,115	38.25 EA		27	2	2	52	7,419
2 814323-1	5,230.04 PLN	53 EA		178	134	9.577 EA		222	19	13	26	7.309
3 808611-1	1,050.90 PLN	6 EA		151	38	10.773 EA		151	13	11	2	7:28
4 AS3510-0215K	3,918.00 PLN	600 EA		811	34	123.306 EA		3,426	286	59	7	7;279
5 814323-2	3,749.84 PLN	38 EA		181	131	20.85 EA		221	18	13	2	7,189
6 793489-1	225.4 PLN	28 EA		371	60	15.537 EA		37,1	31	26	41	7,019
7 732048-56	230.76 PLN	9 EA	1	58	139	18.667 EA		57	5	4	3	6,909
8 753660-2	1,070.02 PLN	14 EA		189	40	15.042 EA		188	16	13	- 4	6,88
9 MS16562-192	8.37 PLN	54 EA		372	81	17.239 EA		374	31	25	46	6 729
0 MS21209C0415	531.92 PLN	503 EA		30	788	302 EA		284	24	2	3	6.679
1 799753-5	2,385.44 PLN	547 EA		167	70	331.75 EA		2,659	222	11	24	6,59
2 788086-12	1,401,44 PLN	19 EA		350	28	8.688 EA		350	29	23	7	6:579
3 774558-4	742.96 PLN	37 EA		261	65	13.875 EA		261	22	17	3	6,519
4 69291C6P3-34	1,186.50 PLN	75 EA		200	75	32.4 EA		204	17	13	15	6,509
5 69344F1-15-N	740.98 PLN	186 EA		124	63	273.778 EA		5,481	457	8	36	6,459
6 NAS1351N4-24	345.03 PLN	53 EA		203	87	52.84 EA		668	56	13	25	6 40
732066-56	523.6 PLN	140 EA		204	57	270.391 EA		3,961	330	13	23	6.37

#### Frequent CX stock out items

CX items need to be looked at based on what you have used historically, and what you are planning to replenish. If you historically have consumed more than plan, the risk of stock out is high. Consumption can be caused by both planned and unplanned usage.

Planned usage is consumption associated with general normal backflush activity such as consumption in BOMs or shipments. Planned consumption can exceed forecast when actual requirements come in higher than expected.

Unplanned consumption captures unplanned scrap, cycle counts, and any other consumption that is not expected to be typical.

# Range of Coverage based on Requirements and Consumption

What if planned consumption exceeds forecasted requirements?

- One common analytic is to look at what you are using compared to what is being forecasted.
- Usage can vary from forecast for several reasons. Forecast may be wrong, there could be an inventory cycle count error, there could be a quality issue, or an item maybe a good substitute for another item, and therefore have unplanned usage.
- If consumption is higher than planned, we will likely stock out.
- We cannot always immediately correct the requirements forecast, or solve the issues causing consumption to exceed plan, so we may choose to a buffer.

#### Consumption compared to Forecasted Requirements

Range of coverage in Days based on Requirements (Forecast/orders) is column H.

Range of Coverage based on historical consumption is column Y.

Column J divides H into I and tells us that the forecasted value is projected to be in stock for more days than history expected it to be in stock.

				1										
1	A			B	С		D	ŀ	ł	1.1	J	K	L	AA
										Consump				
			1							tion				
		1		i						Based	AVG RC			Charle
										Range or	Givided by			SLOCK
			Vais	stock		1	Valuated	Aug I	20	calculatio	tion	No total	Total	Licano
	Material	1.4	alue		1		stock	ttl stk		n v	Based -	usage 3	usage v	frequen
4	732048-60			258.39	PLN		9		50	18	303%	12	3 131	22.7
5	MS51990E105	P	3.	965.33	PLN	~	292	1	71	100	71%	2	2 704	122.7
3	2211021-101-0	22	2	244.47	PLN		19		53	39	136%	13	8 117	21.7
7	AMS5659-0721	EŚT		98.94	PLN		3		190	6	3747%	14	5 142	21.3
8	69344FA-10-N		1,0	044.00	PLN		75		63	17	370%	9	2 1,05	20.6
9	821194-1		1	989.34	PLN		6	/	60	24	246%	6	) <mark>5</mark> 9	20.0
D	825339-7		3,	492.99	PLN		153	<u> </u>	51	33	156%	6	1 1,121	19.6
1	MS124655	_		55.96	PLN		86		63	43	148%	11	485	19.3
2	1001354-1	-		406.8	PLN		2		35	4	868%	12	0 119	19.1
3	1001553-2			387.4	PLN		2		38	4	942%	12	1 119	18.1
1	2211011-100-1	14	1,7	15.28	PLN		21		45	55	86%	10	5 96	17.9
2	ALK2 146			10.00	DIN		2		217		00076	12	2 51	17.0
7	6045245			820.80	PIN		0		82	12	668%	11	176	16.6
8	1000391-1	- 1		936 84	PLN		6		127	48	265%	3	30	16.6
9	PNRP2-295	1	37.	888.85	PLN		95		71	556	13%		3 41	16.6
												1		

This item has 9 pieces in stock.

The 9 pieces are 50 days of supply based on forecast. Based on historical consumption, the 9 pieces are 16 days of supply. If you purchase based on the assumption you have 50 days of supply, And it really only lasts 16 days, what will happen to service.

## Using the SAP Add on Tools

Looking at the column we inserted that compares consumption (history) to Requirements (forecast) in days, we see consumption is 303% of future requirements. If the future actual turns out to look like the past, we have under forecasted our requirements and will stock out.

i											
	4 A	B	C		D	н		J	K	L	
							Consump tion Based	AVG RC			
		ValStock	v		Valuated /	Avg. RC	Range of Coverage calculatio	divided by Consump tion	No. total	Total	Stock outs to Usage
	Material	<ul> <li>alge</li> </ul>	-	- s	tock 💌	tti stk 💌	n 💌	Başed 💌	usage 💌	usage 💌	frequent -
	4 732048-60	258.3	9 PLN		9	50	16	303%	123	131	22.769
	5 MS51990E105P	3,965.3	3 PLN		292	71	100	719	22	704	22.73
	3 2211021-101-022	2,244.4	7 PLN		19	53	39	136%	138	117	21.74
	7 AMS5659-072TES	TF 98.9	4 PLN		3	190	5	3747%	145	142	21.38
Alco is important to note that if yo	u oro	1,044.0	0 PLN		75	63	17	370%	92	1,057	20.65
Aiso is important to note that if yo	uale	989.3	4 PLN		450	00	24	450%	00	1 4 2 4	20.00
under forecasted for any reason		3,492.8	8 PLN		103	62	33	100%	110	1,121	19.07
		408	8 PLN		2	35	40	968%	120	110	19.55
a dynamic range of coverage safe	ety stock	387	4 PIN		2	38	4	942%	121	119	18 18
will give you loss coverage than		1 715 2	8 PLN		21	45	53	86%	106	96	17.92
will give you less coverage than		410.6	6 PLN		2	35	4	868%	120	119	17.50
vou might think you have			0 PLN		0	317	0	0%	6	51	16.67
you might anni you nuvo.		820.8	9 PLN		9	82	12	668%	18	176	16.67
	3 1000391-1	936.8	4 PLN		6	127	48	265%	30	30	16.679
	9 PNRP2-295	37,888.8	5 PLN		95	71	556	13%	6	41	16.679

## **CX Stocking Level**

- This item is consuming at 303% of forecast.
- Looking at the stock we can see nice consistent consumption by looking at the slope of the saw tooth.
- We can also see it is stocking out frequently.



#### CX Example



#### CX Example

From the above review, we know we are under supply in terms of what we are actually using versus what the system requirements are. What else do we know?

- We check the cost of the part, and know that the cost is 29 \$ each.
- We receive it 3.2 times a month, with an average receipt value of 91 \$.

Do we know anything else? Is there a phase out of this part? What should we do?

If we do not know why this is overconsumption exist, but do want to stop stocking out, we could decide to run a service level calculation and put in a safety stock. Since it is a "C" item cost will be small.

#### CX Example

One additional thing to look at one this part is around Item changes. Notice from the graphic that the part's behavior has changed over time.

Using transaction ZMMCHANGEDOC and by selecting a date to capture the historical changes, you may see a change in the MARC table that impacted this parts behavior.

On this item I did not see any changes to explain the overall change. I looked for safety stock, lead times, lot sizes, etc., during the period of change and did not find anything obvious.

Still, always worth a look.



#### Change Documents for Object Class MATERIAL

Object class	MATERIAL
Plant	2760 Q
Material Number	732048-60
Last Changed By	
From Date	01/01/2016
From Time	00:00:00
Change document number	
Table Name	MARC
Table Key	
To Date	10/31/2017
To Time	23:59:59
Plant-sp.matl status	

### **Tracking Performance**

There are 544 CX items in this particular analysis. 23 are at 0 stock, and 34 do not have enough stock to cover all requirements.

Is this good or bad? Are we getting better or worse? How can we know these things?

As part of the process, we need to establish min and max stocking levels by part, and track our status to them.

With CX Parts, being below a minimum is going to be typically much worse than being above the maximum.

# **Closing Comments**

- You need to check your parts behaviors to manage them.
- Quick checks include looking at the number of times a part goes to zero and comparing the consumption history to forecasted requirements.
- Looking at the graphics is very helpful. How is the part behaving? Did its behavior change?
- If you can not quickly understand why you are stocking out, on CX items especially, placing a safety stock in the system to contain the issue may be necessary.
- When running safety stock calculations using a service factor, running a higher service factor on C items as compared to A items, can get you better overall results at a lower total cost.