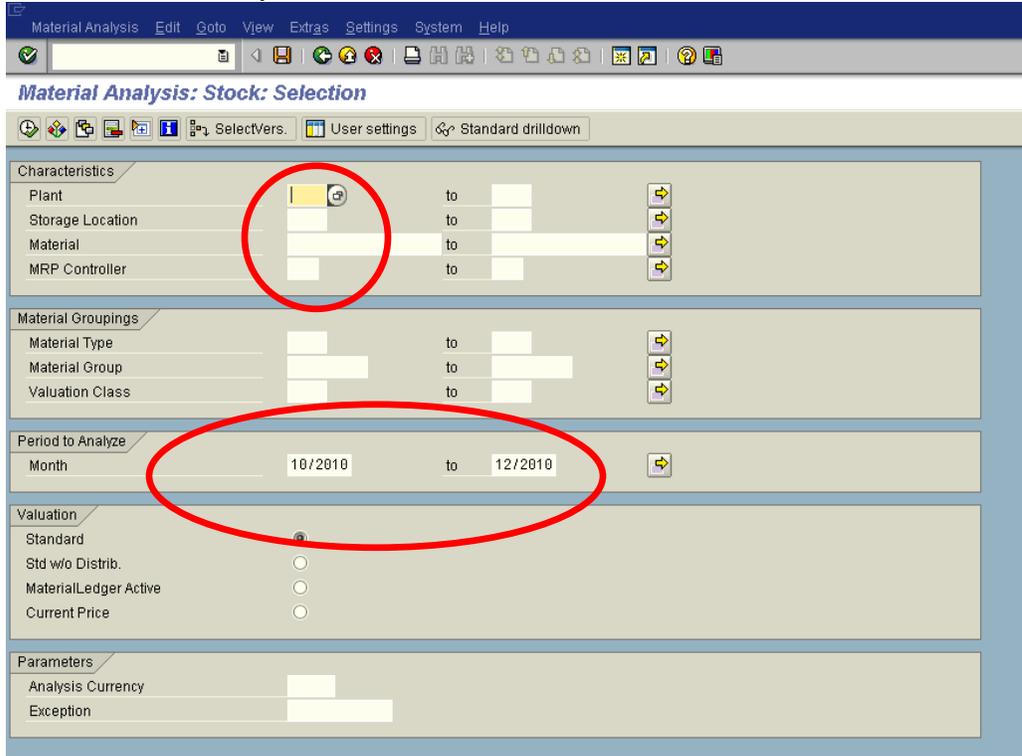


Purpose

Here we will look at some of the inventory screens I am familiar with, and start to do some analytical work with standard SAP.

MC.9 Material Analysis

This is a very commonly used Inventory Transaction Code. When you enter you will need to specify some characteristics, such as plant, and a date range. Note you can refine the characteristics by locations, materials, and MRP Controller Code.



Going straight in you should come up with a screen listing Material, \$ value, and units. There are ways to add more detail that I will cover below. I will mention now though that there is a nice feature associated with the icon in the center that looks a little like a graph. First, click into one of the columns, and then hit the icon. It should give you a monthly snap shot comparison in column format.

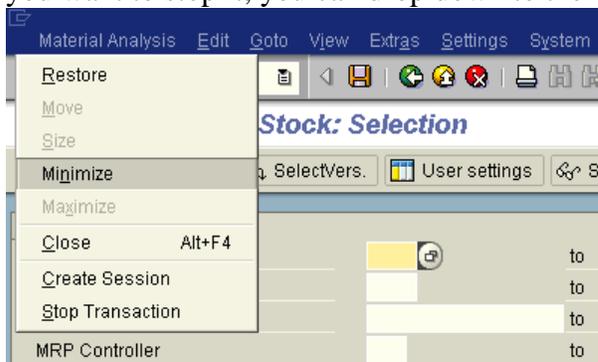
The screenshot shows the SAP Material Analysis: Stock: Basic List interface. The main table displays the following data:

Material	ValStockValue	Valuated stock	Last cons.	LstReceipt	Safety Stck
Total	5,490,041.26 USD	1,465,198.001 ***			83,018.000 ***
5	USD	1,588 EA	01/10/2011	01/07/2011	0 EA
5	USD	180 EA	12/20/2010	12/06/2010	1 EA
5	USD	187 EA	11/12/2009	02/19/2009	0 EA
5	USD	236 EA	01/10/2011	11/30/2010	1 EA
5	USD	27 EA	11/04/2010	12/19/2009	0 EA
5	USD	184 EA	01/05/2011	12/06/2010	1 EA
5	USD	24 EA	01/06/2011	01/06/2011	10 EA
5	USD	557 EA	01/10/2011	01/06/2011	25 EA
5	USD	26 EA	01/03/2011	08/04/2009	5 EA
5	USD	200 EA	11/08/2010	01/06/2011	30 EA
5	USD	80 EA	10/08/2010	11/12/2010	6 EA
5	USD	12 EA	12/28/2010	01/06/2011	5 EA
5	USD	120 EA	01/06/2011	01/10/2011	100 EA
5	USD	155 EA	12/23/2010	01/05/2011	40 EA
5	USD	990 EA	12/18/2010	01/05/2011	150 EA
5	USD	2,499 EA	12/30/2010	01/08/2011	0 EA
5	USD	104 EA	01/03/2011	10/14/2010	20 EA
5	USD	144 EA	01/10/2011	01/07/2011	0 EA
5	USD	13 EA	07/06/2010	08/27/2009	0 EA
5	USD	159 EA	11/17/2009	04/06/2009	0 EA
5	USD	865 EA	01/05/2011	12/30/2010	0 EA
5	USD	12 EA	12/14/2010	12/07/2010	0 EA
5	USD	45 EA	01/03/2011	12/23/2010	30 EA
5	USD	10,099			50 EA
5	USD				00 LB
5	USD				00 EA
5	USD				00 EA
5	USD				00 EA
5	USD				00 EA
5	USD				20 EA
5	USD				0 EA
5	USD	11 EA	08/17/2009	01/23/2009	0 EA
5	USD	637 EA	01/10/2011	12/10/2010	100 EA
5	USD	94 EA	12/16/2010	01/10/2011	10 EA
5	USD	69 EA	12/28/2010	12/21/2010	50 EA

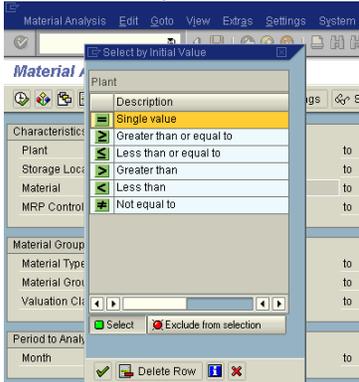
And below you can see the monthly side by side comparison.

Material	11/2010	12/2010	01/2011
Total	1,529,171.470 ***	1,434,896.001 ***	1,465,198.001 ***
5000	0 EA	0 EA	0 EA
5000	0 EA	0 EA	0 EA
5000	0 EA	0 EA	0 EA
5000	0 EA	0 EA	0 EA
5000	0 EA	0 EA	0 EA
5000	15 EA	13 EA	13 EA
5000	19 EA	17 EA	17 EA
5000	28 EA	26 EA	26 EA
5000	26 EA	24 EA	24 EA
5000	13 EA	11 EA	11 EA
5000	383 EA	381 EA	381 EA
5000	14 EA	12 EA	12 EA
5000	13 EA	11 EA	11 EA
5000	280 EA	263 EA	251 EA
5000	60 EA	143 EA	131 EA
5000	122 EA	57 EA	55 EA
5000	29 EA	172 EA	160 EA
5000	59 EA	42 EA	30 EA
5000	11 EA	25 EA	13 EA
5000	38 EA	38 EA	38 EA
5000	2 EA	0 EA	0 EA
5000	0 EA	0 EA	0 EA
5000	0 EA	0 EA	0 EA
5000	0 EA	0 EA	0 EA
5000	20 EA	10 EA	10 EA
5000	29 EA	12 EA	0 EA
5000	1,992 EA	1,326 EA	1,202 EA
5000	0 EA	0 EA	0 EA
5000	0 EA	0 EA	0 EA
5000	0 EA	0 EA	0 EA

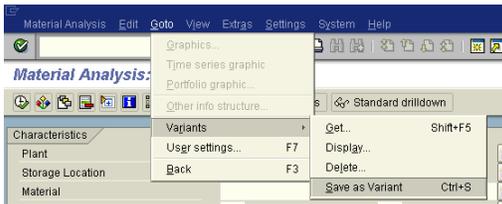
If you have not been in these screens before here are some navigation hints:
First, starting in the dark blue on the very upper most left hand corner is a little box within a box. This box is useful if you launch a transaction that is running too long, and you want to stop it; you can drop down to the last option and kill it.



Under Edit, you can refine the search further

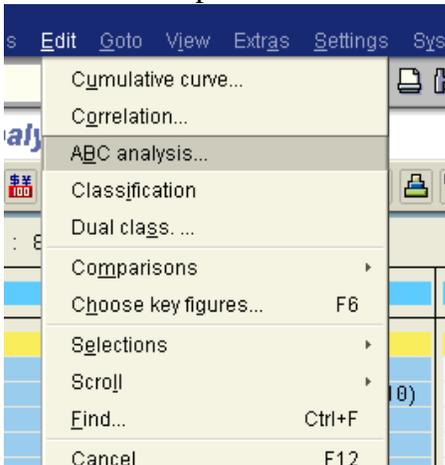


With the GOTO button, you can select a variant, or if you like a particular view, you can save the view as a variant.

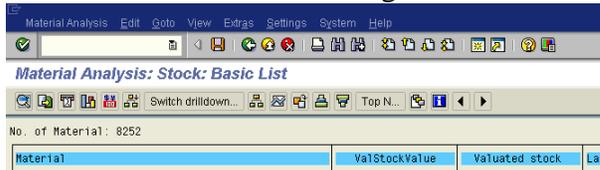


You can also access these on the tool bar right below the words “Materials Analysis”. Just put your cursor on the buttons and it will give you a brief description.

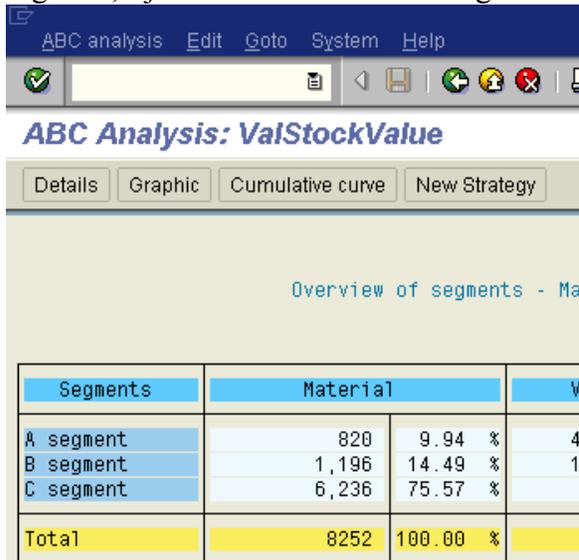
After you execute you should go back and look again and review the options. The Edit drop down has some really nice options, including an ABC analysis and a dual classification option that are both interesting.



Other buttons worth pushing include the “Switch Drill down” which lets you select different drill down choices; the time series button (note you must have your cursor in a column on a figure for it to know what you want the time series on); various sort buttons; the Graphics button; and the “choose key figures” button. Slide your cursor over them to see what they are and click vigorously. Remember these are display screens so there is no real risk to random clicking.

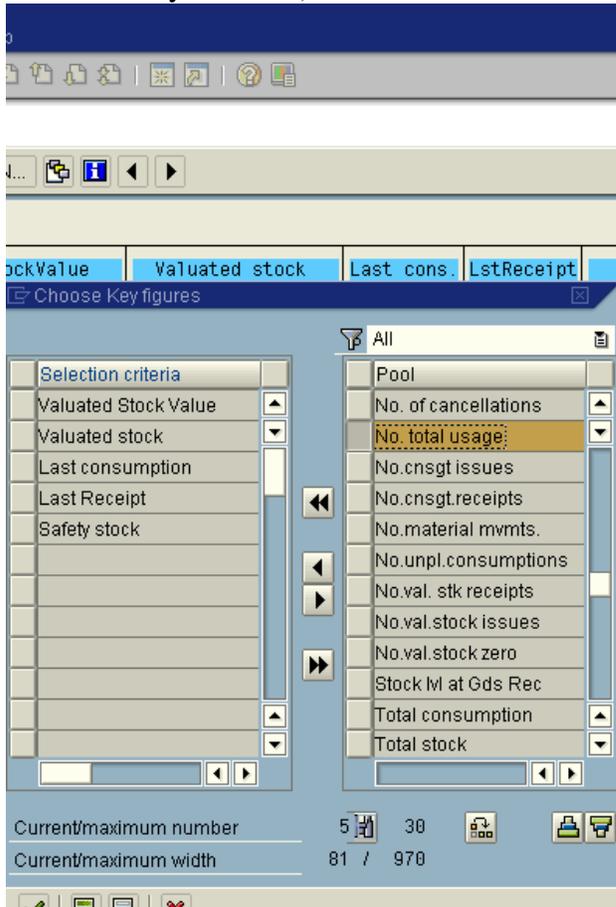


It is also worth mentioning that when you run something like the ABC analysis, you can click into specific segment. With the below screen, if I want to see what is in the A segment, I just double click on “A segment” and it takes me to the A segment subset.



And again, when in a screen, go review the tool bars and see what options you have, and do the graphics.

Also, please note that when you run many of these, you will want to have selected more key figures. “Key figures” is on the lower menu, and it allows more detail to the analysis, which you will need when doing analysis with Dual Classification, etc. It is the one that looks like sheets of paper layered on top of each other (just drag your cursor around until you find it).



And always verify the data you are looking at before jumping to a conclusion. Things are not always as they seem in SAP! For example, the “No. total usage” selection is the number of times a material has been used, not the number of pieces used.

Other Inventory Transaction Codes

These have fairly standard settings, so if you have been through the other MC reports, you will get through these.

Going into any analysis screen in SAP, I strongly advise you to thoroughly understand what the analysis screen is telling you. Many bad decisions have been made based on a bad interpretation.

When I first started using these, I had to toggle back and forth through multiple screens, especially MD04, to understand the meaning of what I was looking at. Sometimes I had to set these codes aside and come back later, often weeks later, with a fresh view to get the benefit.

And it is really important to keep executives and middle managers out of the loop on these transactions until you understand them. They will make some wildly interpretive decisions based around these transactions, and you will be the one to suffer. And you will suffer, badly. Some bloodlines have been extinguished completely, while others will be cursed for at least 7 generations. It is up to you to resist the siren call of the jack ass who wants to show off his or her new bright shiny bauble to management (“Look at me! Look at me! I am the best bauble hunter ever!”), until you understand what is inside this particular SAP horror.

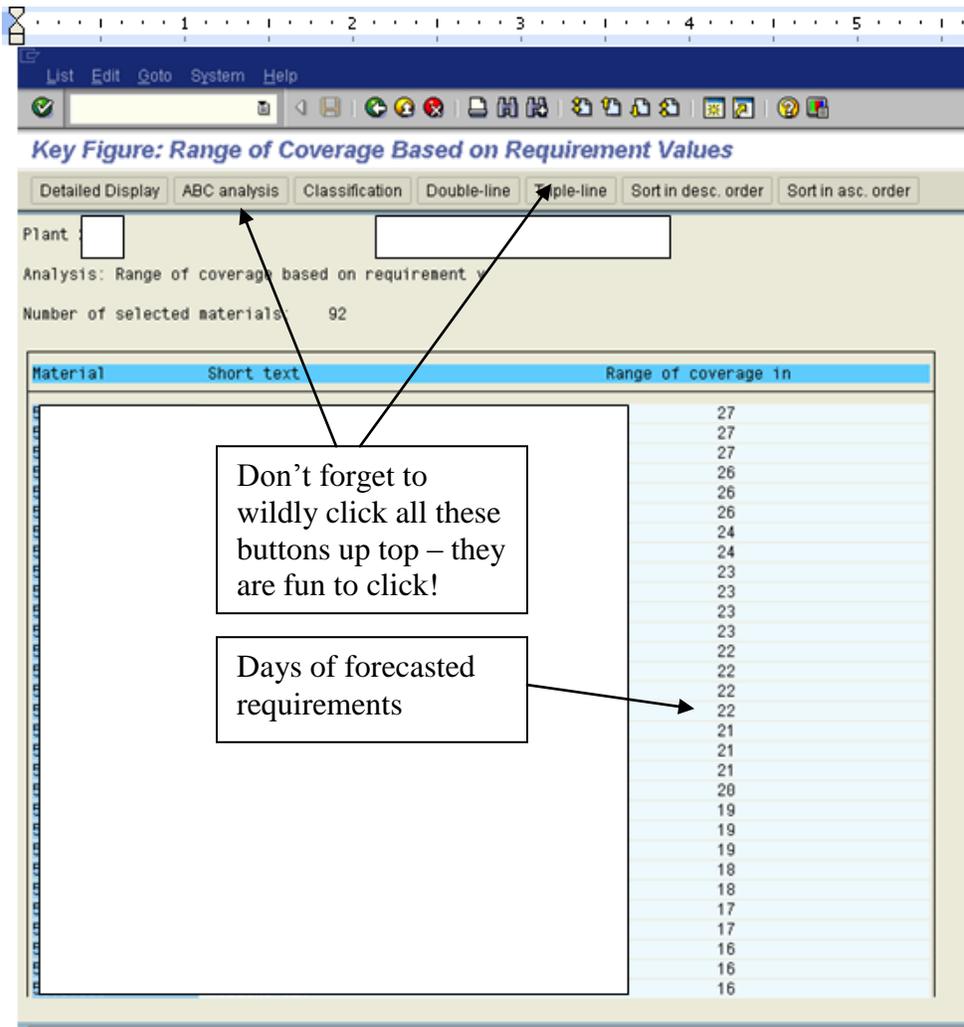
MC43 Range of Coverage

This transaction shows you the FORECASTED system requirements for a material in a plant. And let me repeat myself. If you use this transaction, be sure you understand what it is saying. I do not know why, but in my Telecom plant this was a calculation based on unrestricted usage materials divided by forecast. It seemed to not give a hoot about past due orders. Net result was that it really did not tell me the complete supply picture I was looking for. But it did tell me a big piece of it, particularly on the shortage side. It was definitely a good transaction in areas with some volume, and some decent schedule compliance numbers. In low volume, make to order environments, it was not very effective.

The screenshot shows the SAP MC43 transaction configuration screen. At the top, there is a menu bar with 'Program', 'Edit', 'Goto', 'System', and 'Help'. Below the menu is a toolbar with various icons. The main area is titled 'Key Figure: Range of Coverage Based on Requirement Values' and is divided into several sections:

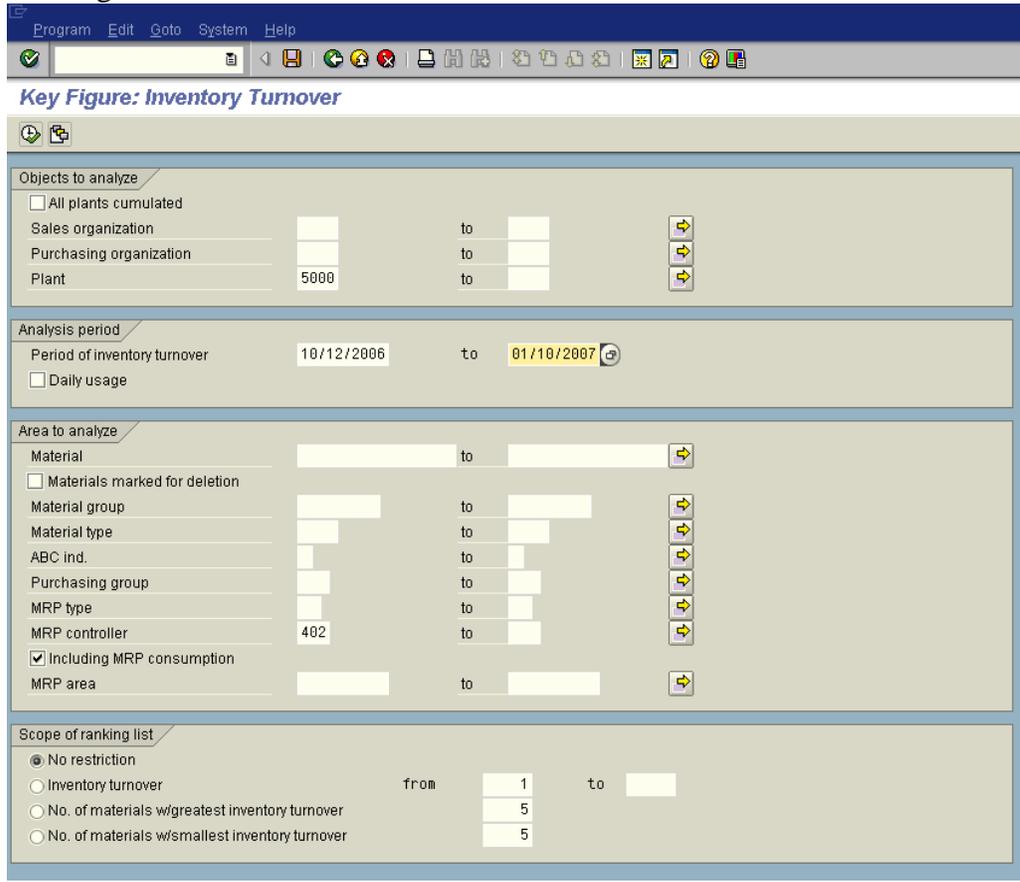
- Objects to analyze:** Includes checkboxes for 'All plants cumulated', 'Sales organization', 'Purchasing organization', and 'Plant'. The 'Plant' field is set to '5000'.
- Period to analyze:** 'Analysis period in days' is set from '01/10/2007' to '04/10/2007'.
- Area to analyze:** Includes fields for 'Material', 'Material group', 'Material type', 'ABC ind.', 'Purchasing group', 'MRP type', 'MRP Controller' (set to '402'), and 'MRP Area'. Each field has a 'to' field and a selection arrow.
- Definition:** Includes radio buttons for 'No restriction' (selected), 'Range of coverage in days' (with 'from 90 to'), 'No. of materials w/greatest range of coverage' (set to 5), and 'No. of materials w/smallest range of coverage' (set to 5).

Again, I have covered up the part numbers, but it is the days of supply based on forecasted requirements that really matters.



MC44 Analysis of Inventory Turnover

You have to populate an Object to Analyze and an Analysis period (Date Range). You can run it wide open or by a set of part numbers or by MRP Controller. The more you ask it to do, the longer the walk around the plant you will need to take while it is working.



When I went into this screen after running a small set, I thought it was telling me gibberish, and it was. The materials set I had selected was low volumes, and the calculation was really looking at average usage divided by average on hand, or something like that. Since the job lots came few and far between, some low volume materials looked like they had terrific velocity. This was driven by the fact that I could assemble them quickly, and always shipped out the same day they were assembled (which was 3 months after we started making the components). So it looked to be fast, but it was not.

In situations like this, you need to get as much information visible as possible, so I selected the “triple line” and figured it out from there. It did take an effort to understand what it was telling me, and you do need to be careful you check and understand the data before launching a load of interpretation upon the organization.

The key things to keep in mind are that it looks at Average inventory levels, against consumption, and calculates the turns based on turns in that period only.

List Edit Goto System Help

Key Figure: Inventory Turnover

Detailed Display ABC analysis Classification Single-line Double-line Sort in desc. order Sort in asc. order

Plant Analysis date

Analysis: Inventory turnover

Number of selected materials: 7

Material	Short text	Inventory turnover				
	Usage (period)	Average stock				
	MRP contr	MRP type	ABC ind.	Matl grp	Matl type	Purch.grp
					3.40	
					30.892 EA	
			A	DIR_MATL	FERT	015
					3.40	
					24.738 EA	
			A	DIR_MATL	FERT	015
					2.71	
					177.923 EA	
			A	DIR_MATL	HALB	015
					1.94	
					45.923 EA	
					1.72	
					30.252 EA	

483 divided by 177.923 gives 2.71 turns in a 3 month period

483.000 EA

177.923 EA

MC45 Analysis of Usage Values

This tells you quite a bit about where your consumption values are. The set looks at the biggest \$ materials first. The ABC button can be very effective here too.

Similar to the caveats in MC44, the Triple Line button illuminates what this transaction is telling us. Basically, it tells you where your volume is in terms of usage. Note that the usage is by material, so there is double counting. For example, a motor used in a car would have the usage for the motor counted at the motor level, but then again at the car level.

You could restrict this by running by MRP controller codes or sets, if you want to. And this double counting is really only a caveat, as there is a lot of useful information in knowing by \$ value where your big hitters are for any given period.

Key Figure: Usage Value

Detailed Display ABC analysis Classification Double-line Triple-line Sort in desc. order Sort in asc. order

Plant:

Analysis: Usage values

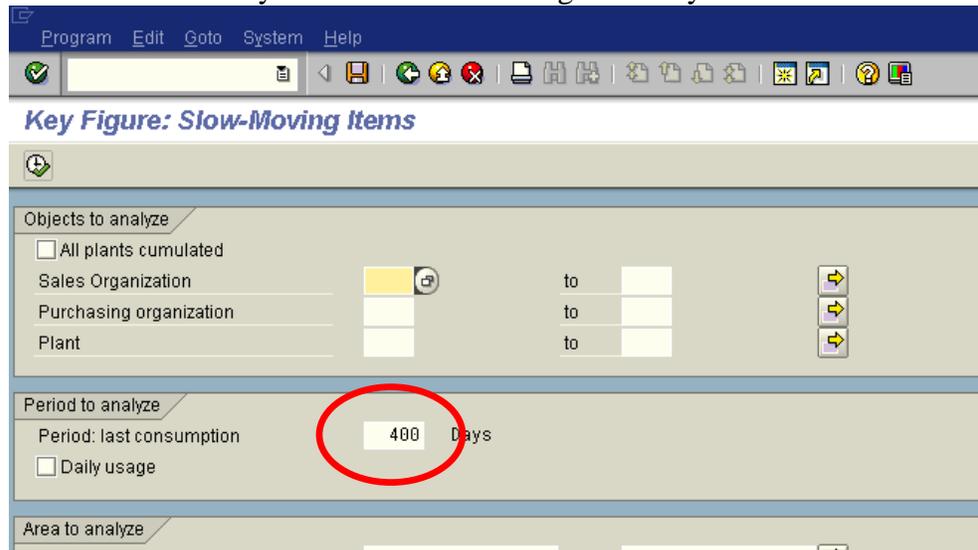
Number of selected materials: 92

Usage value 2,003,564.08 USD

Material	Short text	Consump. value
6034730	BUNCH & PIE SET 4 104 04104 04104	180,058.80 USD 1.99 % 8.99 %
		174,174.00 USD 8.69 % 17.68 %
		141,417.44 USD 7.06 % 24.74 %
		119,441.00 USD 5.96 % 30.70 %
		108,652.64 USD 5.42 % 36.12 %
		107,221.80 USD 5.35 % 41.47 %
		78,484.64 USD 3.92 % 45.39 %
		71,419.89 USD 3.56 % 48.96 %
		55,131.36 USD 2.75 % 51.71 %
		55,121.76 USD 2.75 % 54.46 %
		49,982.19 USD 2.49 % 56.95 %
		40,471.90 USD 2.02 % 58.97 %
		37,078.24 USD 1.85 % 60.82 %
		33,957.84 USD 1.69 % 62.52 %
		32,103.54 USD 1.60 % 64.12 %
		30,602.72 USD 1.53 % 65.65 %
		24,537.12 USD 1.22 % 66.87 %
		23,037.34 USD 1.15 % 68.02 %
		22,586.19 USD 1.13 % 69.15 %
		22,440.96 USD 1.12 % 70.27 %
		22,279.68 USD 1.11 % 71.38 %
		19,740.82 USD 0.99 % 72.37 %
		18,725.44 USD 0.93 % 73.30 %
		17,111.40 USD 0.85 % 74.16 %
		16,660.80 USD 0.83 % 74.99 %
		16,450.20 USD 0.82 % 75.81 %
		16,333.65 USD 0.82 % 76.62 %
		16,217.79 USD 0.81 % 77.43 %
		15,506.81 USD 0.77 % 78.21 %

MC46 Analysis of Slow Moving Materials

This one looks at the usage of a part, specifically the last usage, and tells you how long it has been since there was a known usage. You can define the days to any number you want but it defaults to 400 days. I am only going to take one screen shot here, to show that field. The rest you should be able to figure out by now.



When you run this, it is good to go into triple line for at least the first visit. Some key points to remember as you do your analysis:

- New Parts may have no “usage.”
- Large Lot Sizes can make usage look lumpy (or non-existent for certain ranges).
- If you moved something from being an SAP Inventory item to an expense or bulk item, you will not see SAP usage.
- Consumption includes both planned and unplanned (example of unplanned -lost and cycle counted off)

MC47 Requirements Value

Again, always understand what you are looking at, and validate. This screen looks at requirements by plant site, which should be straight forward enough as long as you validate what types of requirements you are working with, dependent or independent, and understand what you are seeing in terms of interplant activity. Also, watch out in MD04 to make sure you understand the lot size and frequency of builds over the date range.

One thing I would double check, and at this point I cannot find an example to prove one way or the other, is whether it looks for independent requirements as well as dependent requirements. It might treat independent requirements differently (or not at all). I will try and validate this shortly. The rest you will need to figure out on your own, since I am getting tired of doing all the work here.

MC48 Analysis of Current Stock Values

I am not sure how this is better than some of the prior screens, but it is a lot faster since it seems to be only looking at current data.

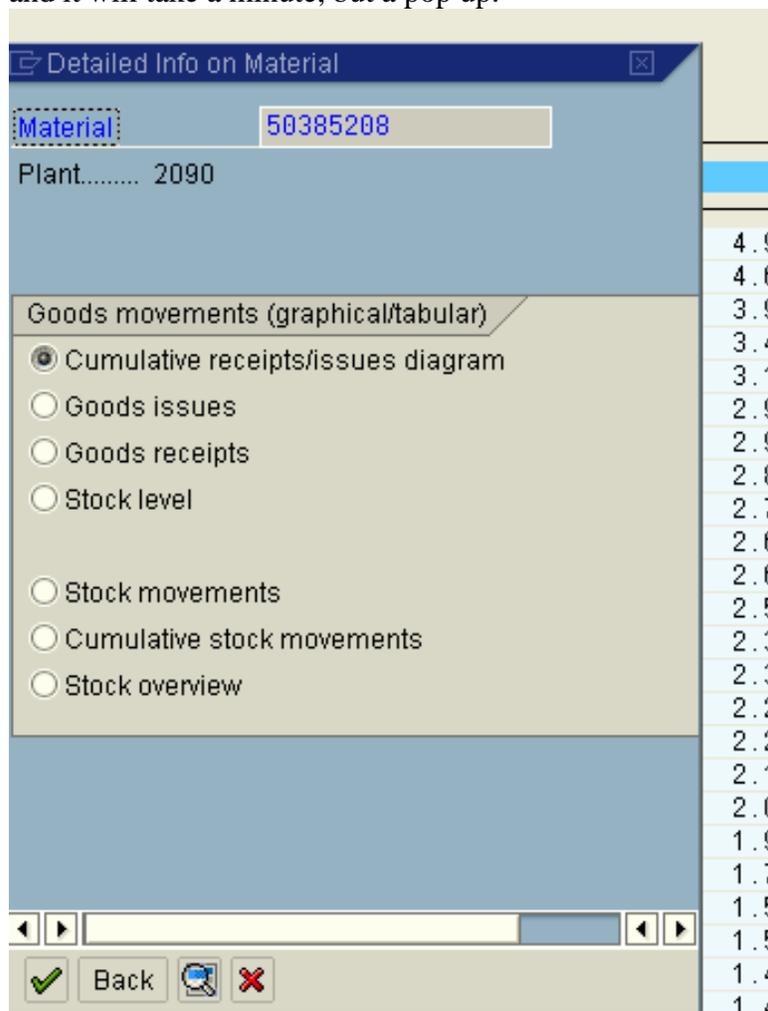
MC49 Analysis of Mean Stock Values

This takes awhile to run, so you may want to restrict it a bit (a lot). It does do what it says though, and gives you average inventory values for the period analyzed.

Where the Real Power Is...

The good stuff in all of this to me is the graphs on usage, which I have saved for last. This is where you can get some really good analytical work done.

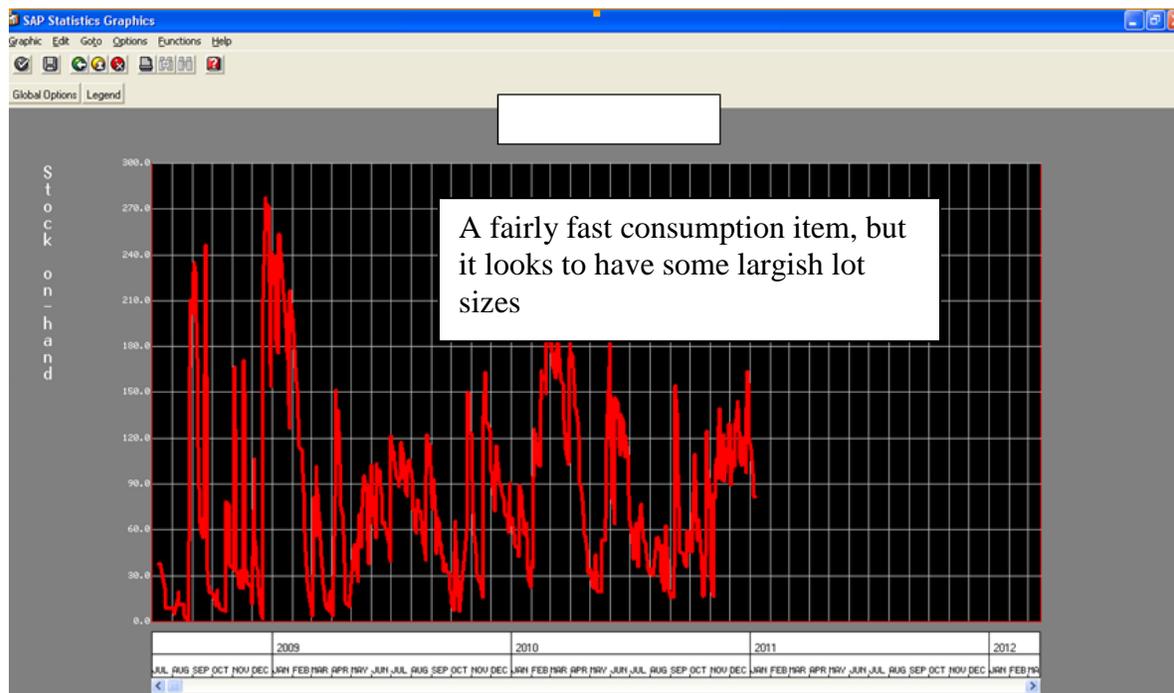
In almost of these screens there will be a button that says “Detailed Display”. Click on it and it will take a minute, but a pop up.



All the toggle buttons are fun to pop, but I especially like the stock value toggle button so let's try that!

On the graph that pops up, you can make some inferences about lot size, consumption, and excess. Note first the date scale across the bottom. When the line goes up, it indicates receipt. The amount it goes up can give some insight into lot size or order patterns. The slope of the decrease can give some insight into the consumption. If the slope is relatively consistent, it suggests consistent consumption.

If the line stays consistently above zero, there may be an opportunity to look at inventory reduction. If it hits zero a lot, it is probably not so good a thought.



The chart below is in weekly buckets (under global options button) shows a process that looks to be improving

