

<b>Title: ABC XYZ Segmentation (MC.9)</b>	Revision 0
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Purpose: The purpose of this work instruction is to introduce the concept of segmentation and to show you how to do some quick analysis in SAP transaction code MC.9.

**I. What is segmentation?**

Inventory segmentation is the idea that some sets of inventories may have similar attributes or behaviors and should be treated differently than other sets.

The simplest form of segmentation is ABC segmentation, where we divided inventory into three segments based on valuation.

The idea with ABC is that A items, which represent 80% of the inventory value, may only represent 10% of the total part numbers. Because they are a relatively low number of items, but have high value, they should be treated differently than C items, which may represent 80% of the part numbers, but only 5 to 10% of the inventory value. B items are somewhere in between.

An example of how we treat A items and C items differently is in cycle counting. A general best practice is to count you're A items four times a year, your B items two times a year, and C items 4 times a year. High value items are monitored more closely than low value items.

Typically, the next segmentation cut begins with segmentation based on variation. Materials people usually get introduced to variation through a safety stock calculation. The idea is that parts highly predictable parts with less variation require less safety stock or buffer, than items that are unpredictable. If we think of a bell curve, a curve that is very centered around an average is more predictable than a very flat curve. It is easier to predict the expected outcome on parts with very little variation from the mean.

A highly predictable part is considered an X part. A less predictable part is a Y part, and an unpredictable part is a Z item.

To talk about variation, we use the coefficient of variation (COV), which sounds scientific and confuses the hell out of some people. Parts with a low COV are less variable than parts with a high COV. COV measures how peaked or flat the bell curve is. Low COV (variation) has a peaked bell curve. Higher variation parts have flatter bell curves.

To determine what your XYZ should be, you can either use an excel spreadsheet and calculate it yourself, or an SAP add on like the MRP monitor. You can base it off consumption history or forecast, or a blend of both. This is a topic that can be debated endlessly. Play with your phone for awhile if people get going on it.

**II. Combining ABC and XYZ.**

Where we start to see real power in segmentation is when we combine ABC and XYZ into a nine-block grid. This allows us to develop rules and standard work around each segment.

	X	Y	Z
A	AX	AY	AZ
B	BX	BY	BZ
C	CX	CY	CZ

Some key concepts to keep in mind:

1. Do we want to assign different service levels to each block?
  - a. If we assign higher service levels to less expensive CX parts, we may save ourselves some time expediting fasteners and washers. Since they are low variation X items it may also be relatively inexpensive to buffer them at a higher service level.
  
2. Do we want to have different replenishment methods for each block?
  - a. If we want to do Kanban or pull system planning, the AX block will have the most repetition, which is good for pull, and the highest value items. It is righteous to cherry pick! If 2% of the parts equal 50% of the inventory value, there is bang for the buck in this block.
  - b. Z items with high variation maybe better left as non-stock, MRP materials. This is not always true so be a little bit careful here. Z items may have a frequent steady demand, but then a few unusual demand spikes may cause a regularly used item to become a Z.
  - c. On C items, do you want to convert them to expense items so you no longer have to cycle count and inventory them?
  - d. On C items, is there a 3<sup>rd</sup> party fastener supplier who can take them over and manage bin replenishments? Can you convert them to expense items and stop counting them while the supplier maintains the supply?
  - e. Do you want to buy cheap C items in larger lot sizes, so you have fewer orders, receipts, invoices? Think of it as buying the big box of nails.
  
3. AX, and BX are your high value steady runners. These blocks are critical if you are to reach your financial goals. AY is also high value, with a bit more variation. You need to be successful in this

subset of three blocks. These three blocks will typically drive your sales, so this is where you want your planners to spend their time.

**III. Using SAP MC.9 to Manage the Nine-Block.**

MC.9 is under-utilized by most SAP users. To show you why it is something you want to use, we will first set up your MC.9 standard lay out, and then use it to understand the nine-block.

First step is to open up the date range to capture on year of history.

**Material Analysis: Stock: Selection**

Characteristics

Plant	<input type="text"/>	to	<input type="text"/>	
Storage Location	<input type="text"/>	to	<input type="text"/>	
Material	<input type="text"/>	to	<input type="text"/>	
MRP controller	<input type="text"/>	to	<input type="text"/>	

Material Groupings

Material Type	<input type="text"/>	to	<input type="text"/>	
Material Group	<input type="text"/>	to	<input type="text"/>	
Valuation Class	<input type="text"/>	to	<input type="text"/>	

Period to Analyze

Month	<input type="text" value="10/2017"/>	to	<input type="text" value="09/2018"/>	
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Valuation

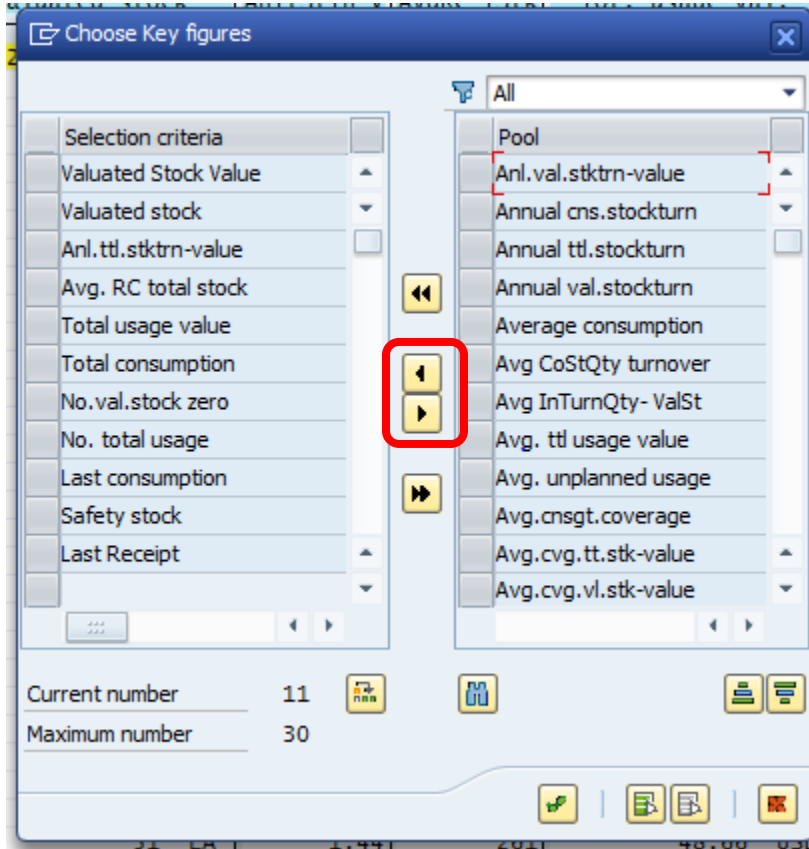
Next run the transaction and select the key figures from the ribbon.

**Material Analysis: Stock: Basic List**

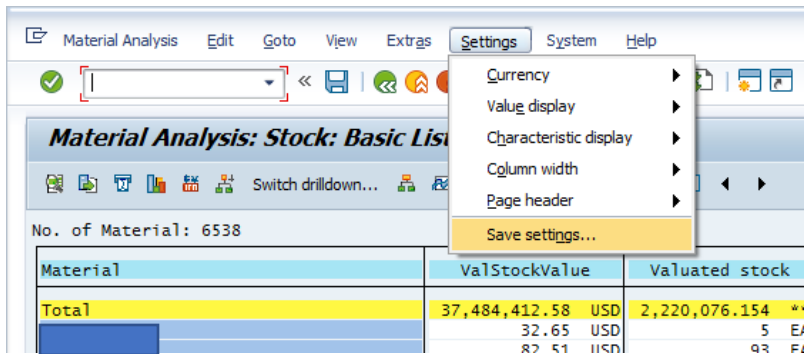
Switch drilldown... Top N.

No. of Material: 6538

From the drop down on the left side these are the key figures I typically look at. Use the little sideways triangles to move the selections back and forth like you might do in Access.



To save these settings, go to settings, save settings and green check your way through it.



Next open it in excel and import your ABC XYZ classification with a VLOOKUP.

	ABCXYZ	ValStockValue	Valuated stock	Safety Stock	AnTtStn-V	AvgRC TStk	Tot. usage val.	Total usage	NoVstZero	NoTotUsage	Last cons.	LstReceipt
1	BX	\$ 3,446	73,320	0	34.58	10	\$ 93,187	1,989,065	22	85	10/17/2017	10/10/2017
3	BY	\$ 4,952	117,900	0	19.51	19	\$ 50,724	1,140,200	15	18	3/21/2018	10/19/2017
4	CY	\$ 3,141	74,796	0	18.79	20	\$ 31,938	710,404	14	15	4/23/2018	5/6/2016
5	CX	\$ 2,258	51,325	0	16	22	\$ 23,400	533,575	20	67	12/9/2017	11/14/2017
3	CY	\$ 2,100	50,000	0	13.95	25	\$ 23,623	529,100	15	37	11/21/2017	10/10/2017
7	CY	\$ 1,412	381,520	0	1.35	267	\$ 1,763	476,480	3	86	6/19/2018	5/16/2018
8	CY	\$ 4,553	108,400	0	11.49	33	\$ 21,592	457,760	13	20	2/22/2018	6/29/2018
9	CZ	\$ 2,084	106,100	0	3.89	93	\$ 8,168	415,900	2	5	11/22/2017	11/8/2017
0	CY	\$ 1,013	361,820	0	0.69	521	\$ 950	339,180	0	44	6/19/2018	10/10/2017
1	CZ	\$ 641	47,000	0	2.17	166	\$ 4,447	326,000	2	2	5/11/2018	2/14/2018
2	AY	\$ 20,370	26,092	0	21.64	17	\$ 253,250	324,388	18	56	6/26/2018	6/6/2018

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Taking the information into a pivot table should allow you to build something like the below table.

Segment	Total Usage	Part numbers	No of Usages	% of total \$	% of Total Part Numbers	% of Toal Usage	How to manage
AX	\$ 147,955,795	169	212,447	38%	3%	21%	low buffer, high management
AY	\$ 177,958,505	220	72,133	46%	4%	7%	low buffer, high management
AZ	\$ 568,835	19	885	0%	0%	0%	no buffer
BX	\$ 11,214,543	162	144,683	3%	3%	14%	Medium Buffer
BY	\$ 26,183,168	388	55,315	7%	7%	6%	Medium Buffer
BZ	\$ 3,357,154	54	1,096	1%	1%	0%	no buffer
CX	\$ 4,798,446	473	330,810	1%	9%	33%	High Buffer
CY	\$ 11,746,460	1,831	170,212	3%	35%	17%	High Buffer
CZ	\$ 4,146,812	1,864	15,885	1%	36%	2%	no buffer

Looking at CX and CY parts represent 4% of the total usage value, but 44% of the total part numbers.

In addition to being low value and many parts, the two categories represent 50% of the number of total usages. This means 50% of the times we went to use any part, they were CX and CY parts.

Another way to think about it is in terms of stock outs. 50% of the times you went to use a part there is a chance it is stocked out. By putting relatively high buffers (98% service factor) on CX and CY parts, we reduce our overall risk of stocking out on a part for a relatively low dollar investment.

It is also worth noting that on AX and AY parts, which are 7% of the total part numbers, the total usage value is 84%. Managing 7% of your parts well delivers 84% of your sales/usage.

By buffering high on CX and CY parts we leave more time to manage the few but valuable AX and AY parts.

The key point we want you to take away from this is that segmentation does let you see parts in different sets, that you can then proceed to manage differently. If at this point you do not see the value of this, you may be in the wrong profession, and we probably cannot help you anymore. You are probably a wonderful person and your mother loves you, but we want you to just go away and stop looking at our stuff. Just go.