

Inventory Analytics with Nine Block Segmentation Part 2

By Eric Stanton

How Do We Use a Nine Block

When introducing nine blocks, I tend to start it as a conversation. It is important to get a holistic understanding of the nine- block. The conversation should include buffers, replenishment strategies, and lot sizes, as they will determine your inventory optimization plan.

It can be helpful to start with a blank nine block on a white board, and then to start to have the conversation and populate examples. I don't typically coach to standard work here, as I am most interested in them getting the concept first. We can apply standard work and statistical models later.

	X (or H)	Y (or I)	Z (or J)
A	<p>Buffer conversation should start at one week.</p> <p>Lot sizes should also be considered, and held at a lower level than a C item. For example, one week of supply of an A item maybe reasonable.</p> <p>AX items converted to pull replenishment methods allows you to select the few items with the highest value impact for your lean initiatives, so that can be one part of the conversation.</p>	<p>Buffer conversation should start at one to two weeks.</p> <p>If an item has a coefficient of variation that is near X you may want to treat it like an X.</p>	<p>Needs to be investigated but in general I would use Forecast as a guideline.</p> <p>The hazard of consumption is that as an item dies, it becomes more variable, and will want higher buffers.</p> <p>Z items maybe best left with no buffer and run off straight MRP. Or if MRP says it is more stable going forward, perhaps it should be an X or a Y. HIJ may help here as well.</p>
B	<p>Buffer conversation should start at two weeks.</p> <p>A lot size of two weeks of supply may also be appropriate.</p> <p>At some sites, B items look and act a lot like C items so you may decide to treat them the same.</p>	<p>Buffer conversation should start at two to four weeks.</p>	<p>Needs to be investigated but in general I would use Forecast as a guideline.</p>
C	<p>Buffer conversation should start at 2 to 4 weeks. Depending on cost, a quarter maybe the right period to cover.</p> <p>Note lead time can change this considerably.</p> <p>Larger lot sizes, for example 20 to</p>	<p>Buffer conversation should start at 2 to 4 weeks.</p> <p>Note lead time can change this considerably.</p> <p>Larger lot sizes, for example 20 to 60 days of supply, maybe appropriate</p>	<p>Needs to be investigated but in general I would use Forecast as a guideline.</p> <p>Note some MOQs will be so high you effectively have buffer built in.</p> <p>You may still want to add a</p>

60 days of supply, maybe appropriate on inexpensive items.	on inexpensive items.	time based buffer as if you rarely buy something, you may need to resource it next time you need it.
Inexpensive items are also candidates to make expense items and 3 rd party replenishment.	Inexpensive items are also candidates to make expense items and 3 rd party replenishment.	HIJ can be helpful. If it is an H you probably want some buffer.

Once you have your nine block built, start looking at the detail data. Build it out and then start documenting in detail your rules. Try not to bog down on exception, and focus on rules that cover most of the parts. At times when my team would start to bog down, I have used 12 blocks, where one set of blocks was a parking lot to put exceptions in.

The idea here was to avoid exceptions driving the conversation, and to focus on the common. I have seen 27 blocks where value (ABC), variation (XYZ), and frequency of usage (HIJ) were all broken out. For me this is quite a lot. I usually go with the ABCXYZ nine block (or twelve block depending on who is on the team), and then when in individual segments we would use HIJ to validate a parts membership in that segment.

For an industrial company with a high degree of dependency between parts, i.e. you cannot consume one without the other, you “X” item strategy may look like the below matrix. The key is to understanding this is fairly basic. When you buffer high on the many, inexpensive parts, you can focus on managing the more expensive parts more closely.

Distribution	X # of part numbers	X Value	X Lot Size	X buffer	X replenishment
A	5 to 10% of the total X part numbers	A=80% of Usage Value, typically AX is at least half that.	5 day lot sizes	Lowest Buffer	Pull, Supplier Ship from Stock, etc.
B	5 to 20% of Total X Part numbers	15% of Usage Value	10 day lot sizes	Medium Buffer	
C	80% of Total X Part numbers	5% of Usage Value	20 days lots sizes	Highest Buffer	3rd party replenishment, min max, etc.

If you don't have the SAP MRP Monitor, or are operating in a different system such as Oracle, you should still be able to do this. You would need cost, usage history and frequency of usage data, and then you would need to make up some rules.

When building a “from scratch” segmentation, and making up the rules to drive the segments, it will be important to make sure your nine blocks actually show differentiation. The core idea is that different segments behave differently, and that results in you adopting different buffer, replenishment and lot sizing strategies to achieve more optimal results.