

LEAN THINKING IN WHOLESALE DISTRIBUTION...



Do Wholesale Distributors Really Need Better Forecasting? Exploit the Constraints - Lean Thinking Can Take Time and Cost Out of Your Inventory and Supply Chain

*A Thought Leadership White Paper
By
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Introduction:

Maybe you've decided to read what this whitepaper's title promises because you feel that your current inventory and supply chain business processes are not delivering its appropriate contribution to your operational excellence objectives. Maybe you want to leverage your supply chain and move it to the next level because you are no longer satisfied with just incremental improvement. Or, maybe you are looking for ways to unlock capital. Regardless of your specific motivation, I expect that you understand that excellence in inventory and supply chain management drives value; that fundamental flow of materials, product and information from suppliers, through your company to its customers. And that supply chain is not just about warehouses, forklifts and trucks.

Frankly, I never expect any article or whitepaper, I author, to convince anyone to immediately make improvements; rather, it's intended to describe to you a more radical approach – a strategy, a change in thinking - successfully adopted by companies both within the distribution and manufacturing sectors. Maybe I would even call it an alternative to those approaches that have been worked to death for years; squeezing costs and assets.

Lastly, this whitepaper is not meant to be inclusive of other major initiatives you can take; SKU rationalization, improved inventory accuracy, or data sharing and aggressive collaboration with suppliers, etc. Rather, what I want to address here is a more elegant solution to the “how much of what, where, when” questions.

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Don't Be Chained To Old Thinking - Make Distribution Lean

So to begin, I need to tell you that I've developed a few serious concerns based on some recent comments regarding my past articles and whitepapers written on the subject of **"Pull Inventory & Supply Chain Management"** and the radical change it describes - as opposed to just being acceptant of incremental improvement. First, there is the confusion that is sometimes created by "experts" who seem to be stuck in the "push world". Push world? Yes, it's those folks still stuck in the 90's, or earlier (the ROP/EOQ and Min-Max world), who continue to suggest that "better forecasting" (i.e.; more accurate forecasting) and warmed over inventory management concepts are still the key to best practice in W-D inventory and supply chain management. In other words; forecast and then "push" product downstream through DC's to all your branch locations. Secondly; what seems to be a desire to maintain the status quo - optimize the old rules, remain prisoners of and chained to their own thinking - rejecting what appears to be counter-intuitive, or contrary to mainstream thinking. Just maybe it's a disturbing lack of open mindedness to new concepts in distribution inventory and supply chain management, most of which are receiving wider acceptance in the distribution world, whether wholesale-distribution, retailing or manufacturing (they distribute too!). All of which have their own lean advocates and their own lean-implementation success stories.



Some would say; if we could only develop better forecasting algorithms (or better use the ones we have) to make intelligent decisions, then we have the answer to; "the right quantity of the right item, to the right location, at the right time" (a tough nut to crack under any circumstances!). Right? **Wrong!**

Have you ever measured your forecast accuracy? Many companies haven't and many complain about it. Frankly, I rarely see any better than 70% to 80% accuracy (that's 20% to 30% error). In response, companies try to improve their systems and processes for forecasting and inventory replenishment planning, sometimes at the expense of execution and management. Some spend a lot of time and money on it. Most have pretty extensive enterprise resource planning systems in place to translate forecasts into product distribution plans - from suppliers to the distribution center and across all

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branches (sometimes even direct from the supplier to the branch) – all the while attempting to optimize transportation costs, customer service, warehouse capacity, inventory dollars and turns, etc. So why do we still hear complaints about forecasts, misallocation of product, and why do many wholesale distributors still achieve mediocre inventory turns? If in fact, we can agree that forecasting is a constraint, why not attempt to exploit that constraint?



What commonly is used to achieve these optimization objectives is push-based planning. **“Push” being defined as; generating a replenishment order (purchase order, stock transfer, etc.) based on forecast and a calculation of when product will be needed in the future** (based on inventory balance, lead-time, and safety factors, etc.).



You know, many manufacturers have been lean advocates a lot longer than most wholesale distributors. Historically, most manufacturers had customarily focused on push-based planning themselves to initiate their production orders - as a way to reduce their set-up costs, total labor and capacity constraints. Many though have made a 180 degree turn in the conventional wisdom - to something called **“pull”** – that is, planning and execution based on “actual consumption of product or material”. In other words, they drive the execution of production, its movement and product positioning based on downstream consumption (some call it the customer’s buy signal - actual demand). They’ve established “target inventory” as a means to buffer uncertainty. They have focused on the bottlenecks to optimize their inventory drivers – and modified those drivers where necessary. In wholesale-distribution we hear little conversation about this because distribution planning has historically been one of **forecast-based push**.

Forecast-based push systems ask us to “forget” that we always have excess inventory – in other words; the inventory we call safety stock – the inventory we don’t often choose to “see” or acknowledge – the inventory we plan, to offset the variation inherent in forecasts and customer orders.

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Why Does Lean Pull-Based Planning & Execution Deliver Results?

I often say that inventory is the least optimized distribution resource in terms of undervaluing its costs or penalties. We forecast and plan by SKU. We have DC's and branch warehouses to house inventory. We have Purchasing & Supply Chain Managers and their staff(s). We have physical inventories and cycle counting to ensure accuracy. And we have special sales sometimes to clear-out excess inventory. Often, these costs are not considered; rather carrying costs are generally limited to the cost of capital, insurance and maybe some factor for obsolescence and/or shrinkage. Computed in this customary way, they rarely add up to a trade-off of inventory - for transportation or other costs.

This rationalizing of inventory costs was an issue for many manufacturers also. The "lean ones" found they could have it both ways; with lower production rates, excellent customer service, and low inventory. Again, challenging the conventional wisdom that said; we must have sufficient inventory to optimize transportation and meet customer demands.

The break in conventional wisdom for some manufacturers came through lean thinking approaches to reducing their production batch sizes and production cycle times. It led to more frequent resupply to their whole supply chain. **I believe this type of lean thinking can do the same in distribution!** In reality, only the terminology is different; order quantities and replenishment frequency interval in distribution - now replace what manufacturers call batch sizes and production cycle times, respectively.

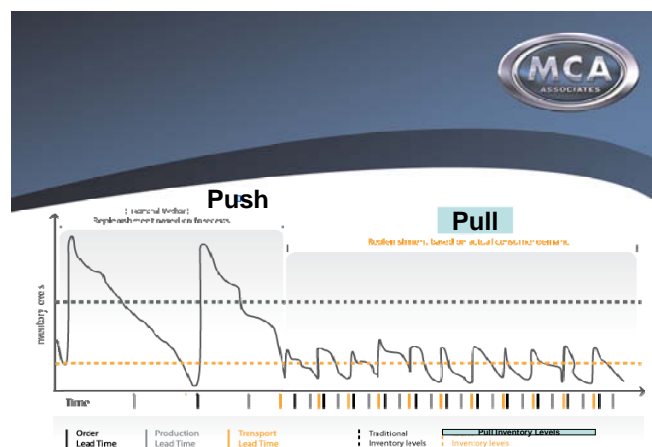
Pull processes and the placement of target inventory/buffer inventory are real and new answers for distribution. But, of course, any transformation requires **some changes in thinking**, especially when process change is involved:

- Forecast accuracy and stability can be improved through aggregation of demand across warehouses. In other words; using the DC level forecast for planning and concentrating buffer inventory at the DC aggregation point. The variation in demand at the DC is typically less than at the branches.

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- One of the most radical departures from existing norms, and a critical transition, is to “pull inventory back” from branches. **I know, it’s scary, isn’t it?** No, not all the inventory! Again, keep in mind that forecast variance is highest at the branches. It’s a statistical truth! Strategic inventory positioning, therefore, becomes paramount. A failure to properly position inventory results in “waste” – a violation of a major “lean principle”. So why not move more safety stock to the DC, where it can best protect the whole distribution network?
- Inventory levels should be a function of replenishment time and frequency. Focus on reducing the lead time and increasing the frequency of replenishment – resupply - (those are the inventory drivers!), not just safety stock reduction. As the frequency increases, the more you are driven by actual consumption/demand. Put another way; “pull” initiates replenishments closer to the actual quantities that were actually sold and shipped to customers, minimizing allocation error.
- Allow “pull” to create a replenishment stream – **a continuous flow** – of inventory to stocking locations (from supplier to DC, from DC to branches). Increasing the frequency of replenishment increases the speed and velocity of the supply chain - increasing through-put!
- **See the chart below, “it’s worth a thousand words”.**

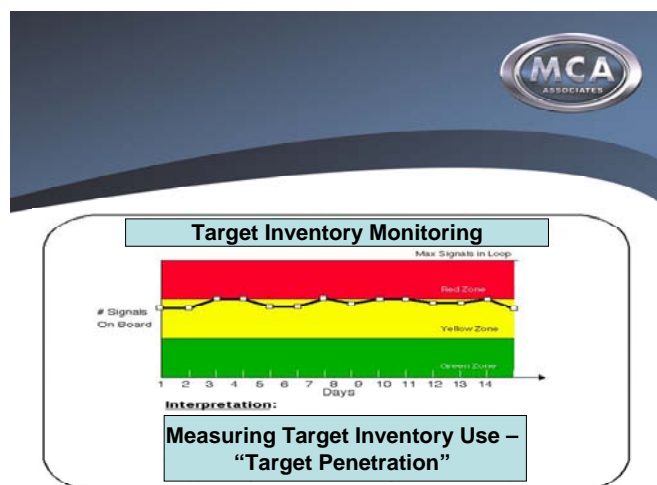


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- Planning can continue to be based on forecasts, while execution will be driven by an actual consumption-driven model.
- Target inventory, let's call it buffer inventory, is not some reorder point or min/max calculation (Refer to the whitepaper offered below for how it's calculated). In other words, it's not used to trigger replenishments, but rather it's meant to be monitored. The target/buffer inventories can be "dynamically adjusted" to accommodate real life situations such as product introductions and ramp-up, trending, seasonality considerations, etc. The figure below shows, as an example, the target/buffer inventory broken into three zones (red, yellow, green). The real intent here is to monitor demand variation and buffer inventory penetration, not necessarily the inventory level. The Pull quantities (based on actual consumption) will take care of the inventory level based on the target/buffer, lead-times and replenishment frequency. What results is more of a replenishment monitoring mechanism focused on visibility to the "health" of the system.



- For any one distribution network, obviously there may be no one single answer – it's dependent on your particular distribution network, geography, and even the level of external supplier collaboration you may have been able to develop; but it

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doesn't absolve us of the need to apply some lean principles, break down the bottlenecks and not ignore the inventory drivers – not being so “forecast driven”.



A Call to Action:

It's time to move away from the old Gordon Graham – “Distribution for The 90's” inventory management methods - the addiction to inventory – the total reliance on forecast accuracy, and the mediocre inventory turns that typically result - and that wholesale-distributors for too long seem to have been acceptant of.

“Pull” brings the concept of “total cost of ownership” to the forefront. Now, if your reaction to all of this is a concern about transportation costs or maybe even labor costs, then do a cost analysis. Using the paradigms above, I'm confident that you will find a trade-off point (a total cost approach) that provides better results than what you've obtained previously. Trust me, it won't be easy work; your own mindset will have to change first and you will have some issues, maybe, with some employees and/or suppliers who need to think differently too (that's a topic for another time!).

So, no one is really saying “don't forecast”, start with a forecast, particularly for longer-term and overall business planning; but be “wiser” about committing to strategic inventory positioning and replenishment - recognizing the inherent inaccuracy of forecasts and the diminishing returns of spending more time and dollars on it – just for some incremental improvement. **Use pull-based replenishment execution to exploit the constraint!**

As is always the case with newer solutions, the focus is on a change in thinking – policy, procedure, measurement, and ultimately to behavior, rather than just on technology.

For a complimentary copy of a recent whitepaper which more fully describes this radical change in thinking, please email me at: hcoleman@mcaassociates.com.

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MCA Associates, a management consulting firm since 1986, works with wholesale distribution and manufacturing companies that are seeking and committed to operational excellence. Our staff of Senior Consultants provides operational excellence – idea leadership - and implements continuous improvement solutions focused on business process re-engineering, inventory and supply chain management, sales development and revenue generation, information systems and technology, organizational assessment and development, and family-business succession planning. MCA Associates may be contacted at 203-732-0603, or by email at hcoleman@mcaassociates.com. Visit our website at www.mcaassociates.com.