Second, let's explore the solution

Whenever the topic arises, people seem to be looking for a five to ten word summary that they can fit into their existing knowledge. And, I am unable to put a simple sentence together to answer the question. So, to summarize as succinctly as possible "What is Demand Driven MRP?"

The Method
DDMRP is a methodology and philosophy of running a company by focusing on flow through the supply chain. The foundation of DDMRP involves a philosophical shift from cost centric to flow centric decisions. This means that you focus on moving parts through the process to actual demand rather than focusing on cost and utilization rates through equipment. As supported by management accounting, basic economics and physics this flow is proven to be THE key factor in successfully managing return on investment.

How it Works
DDMRP has five sequential components in order to accomplish this objective:
1. Strategic Inventory Positioning – strategic decoupling points are established that stop the transference of demand signal distortion up the chain and supply continuity variability down the chain thus minimizing or largely eliminating the bullwhip effect.
2. Buffer Profiles and Levels – stock levels of decoupling inventory are established at these decoupling points based on unique attributes of those parts in order to provide the "buffering" effect.
3. Dynamic Adjustment – the buffers are then adjusted based on demand rate changes and known or planned future events (seasonality, planned shut downs, promotions, etc.)
4. Demand Driven Planning – the buffers are replenished through an intuitive and unique supply order generation equation called the "net flow equation" incorporating qualified actual demand. There are no more planned orders and all of the dependent demand chaos associated with them!
5. Demand Driven Execution – the open supply orders replenishing the buffers are managed by the actual status of the buffer they are feeding. It is highly visible and very intuitive.

DDMRP takes many concepts that we all know and puts them together in a different way than we have seen before. Basic MRP methods are still used but the environment is paced to actual demand and signals are highly visible and without constant change.

The Results
DDMRP provides solutions to many problems I have been facing.
1. Kanban failure points. Kanban is a great system for making sure parts are available. However, when faced with surprise spikes or with aggressive recovery of past due orders, Kanban fails. DDMRP covers both of these issues. Kanban is still valid for parts that are not on BOMs or are used outside of the existing BOMs (i.e. zip ties or hardware used also for maintenance).
2. Current prioritization. When I arrive to work, I'm faced with maybe 20 items to expedite. Which one do I start with and how did we not notice these earlier? DDMRP provides a buffer status with visual reports to show you which items are furthest into the red (safety) zone. You start with the one deepest in the red. And, you would have noticed it yesterday, when it was

deep in yellow or breaking into the red. This visual report not only gives your current expedites, but also gives you hope that tomorrow you won't come to work with even more expedites.

3. The Safety Stock bungee cord. When we have a shortage, people demand that safety stock be added to MRP. Weeks later, we have overages of the same part number and people demand that we remove safety stock. The cycle continues indefinitely. Safety Stock exacerbates the bullwhip effect and drive suppliers crazy, not to mention the warehouse people who have to find room to store the excess. Safety stock also drives planners crazy, as they are pushed to expedite parts just to appease the MRP Gods, who would have us try to reverse the calendar to have parts delivered on time.

4. Methodology wars. DDMRP pulls the concepts of Lean, Theory of Constraints and Six Sigma together. Flow is the centerpiece of DDMRP and flow is also the centerpiece of each of the methodologies above. They all have their place in management and decision making and it's high time someone got them to work together towards the common goal instead of fighting about which is better.

5. Multi-level ordering schemes. We have parts we order from overseas to stock a warehouse and then we have releases that we make from that warehouse stock. If we use MRP for ordering from overseas and another system to order from the warehouse, it becomes completely confusing. I can use the DDMRP methodology and equations to set my ordering point based on the Net Flow Equation, with a little tweaking so one equation uses the long lead time for overseas order and one uses the shorter warehouse order lead time. Because we are using the same data in our equations, now the confusion is reduced.

DDMRP is not infallible. If your bills of materials are faulty, it will not work (MRP will be an even bigger disaster). If your on-hand balances are in significant error, it will not work (neither will any other inventory method). If your sales order entry is prone to lots of errors, it will not work (once again neither will any other system).

DDMRP is in rapid adoption mode and is now in use in major corporations around the world including Unilever, Michelin, Boeing, Louis Vuitton, Amore Pacific, Hyundai, Coca-Cola, Allergan and Nestle.

This short and concise definition is by no means complete. But it's a best effort to summarize the main points and advantages so people can see why they need to explore this subject deeply and adopt it quickly.

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