



DDMRP

The Reality behind the Acronym.
What does this mean?

A QAD DynaSys Leadership White Paper
for the Global Supply Chain

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DDMRP – THE REALITY BEHIND THE ACRONYM. WHAT DOES THIS MEAN?

INTRODUCTION

DDMRP (Demand Driven Material Requirement Planning) is a planning method used both for supply planning and execution control. Where by defining stock positions and stocking levels in a dynamic way; it generates supply events according to the sales order of the day plus qualified sales spikes. DDMRP guides and alerts execution in a visual way. To understand DDMRP requires one to think differently about supply chain flows and the decoupling of specific points in the supply chain. This is easier said than done, but if this hurdle is overcome, then DDMRP becomes surprisingly uncomplicated to understand and simple to use. The challenge however lies within the “if”.

SO WHY THE BUZZ AND HYPE?

DDMRP is not a buzzword, it is not a marketing spin on an existing concept. The buzz comes from the unique approach to modelling supply chains and the process of triggering a supply event from a demand signal. With DDMRP a supply chain is not a chain, it is a network of networks. The networks within a network are decoupled, meaning there is no immediate and direct action and reaction between them. The flow of goods is buffered in strategically located positions with dynamically updated targets. The proverbial bullwhip impact is thereby controlled.

“...With DDMRP a supply chain is not a chain, it is a network of networks...”¹

THE VALUE IS NOT JUST INVENTORY AND SERVICE LEVELS

The incremental value of any concept or technology is only in its comparison to a baseline

or existing accepted norm. DDMRP screams volumes on the value spectrum when compared to traditional MRP and iterative DRP. A tangible reduction in obsolete and excess inventory in addition to a proven track record of customer service improvements. Of course, reduced inventory and higher service levels are value claims not unique to DDMRP. So why is DDMRP different?

The ability of DDMRP to drive reduced obsolete inventory comes from two core concepts; decoupled inventory points, and continually recalculated buffer levels. Best-in-Class MRP and Advanced Planning Systems (APS) support time phased safety stock positions across the network from finished items down to procured components. But often these parameters are set without too much science and each is driven individually by a desired service level or days cover policy. Such policies are set and rarely revisited. In advanced cases, multi-echelon inventory optimisation (MEIO) systems are able to apply additional science to ensure that the safety inventory is optimally distributed throughout the network, however MEIO systems have a high cost of ownership in terms of the required talent and data maturity. DDMRP considers **where** to hold inventory before considering **how much** and holds stock only at the pre-determined decoupled inventory points (buffers). JIT (Just in Time) principles apply for inventory flows between these buffers. This reduces the number of positions where inventory is held to a carefully managed minimum. In addition to the definition of buffer locations there is the calculation of the buffer levels. The buffer levels are dynamically updated as the dependent parameters change. It is important to note that there is no rogue forecast orders generating excess stock. Every replenishment action is purposeful in meeting a specific buffer position.

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WHAT DOES THIS MEAN?

DDMRP demonstrates a strong value proposition in customer service levels. DDMRP is driven by “Real Demand” (Sales Orders), and that “Real Demand” is satisfied by an inventory buffer which is defined to anticipate the level of demand. That demand signal then trickles through the Bill of Material only as far as the next buffer in the network and, where necessary, initiates buffer replenishment. Remember that in DDMRP there are no make-to-forecast orders; the stock must already exist in the buffer. So as long as the buffer position and replenishment parameters are appropriate, high service levels can be expected.

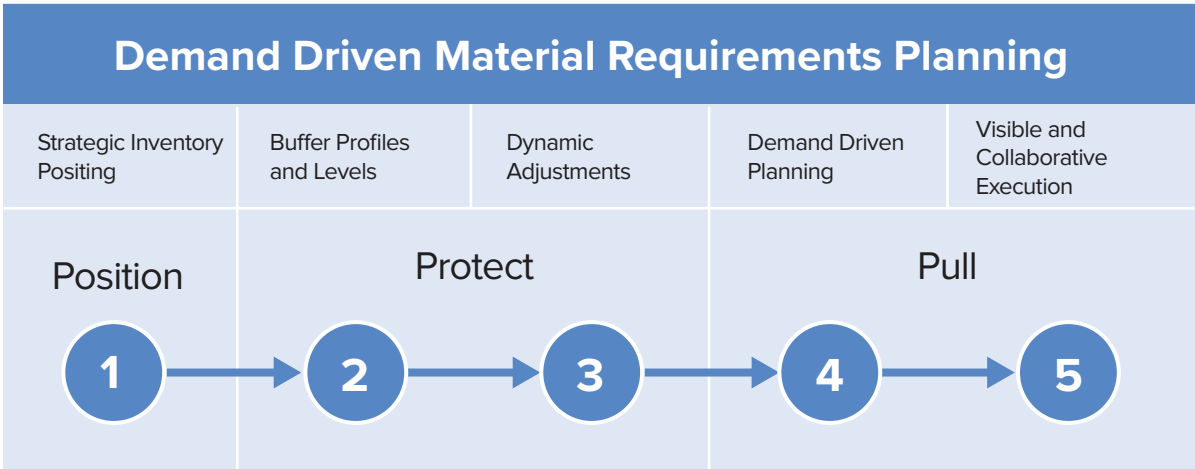
However for many customers, these benefits are augmented with the unique value proposition of simplicity. Once one has embraced the demand driven basics, and the strategic configuration components are in place, DDMRP is remarkably easy to plan with. It is a five step process simply structured into three phases; Position, Protect, and Pull.

- **Position:** the real DDMRP grunt work is done in the strategic definition of the decoupling points. This is an important part of the implementation requiring expertise and experience.

- **Protect:** once the buffers are defined, products are analysed and allocated a buffer profile to determine the buffer levels. Then the buffers are continuously updated to ensure they remain relevant to the changing conditions.

DDMRP is not limited to production planning. A key benefit of DDMRP is common enterprise-wide supply planning process across all facets of distribution, production and procurement.

- **Pull:** this is the day in the life of a planner. Perform an order pulled planning process to balance demand and supply for each product using the inventory buffers. Then using high visibility alerts, ensure the right priorities are being addressed based on actuals. This is executed for each buffer requiring replenishment; not for each iterative step of a DRP/MRP model as may have been the case previously. The execution component is remarkably simple and intuitive. DDMRP borrows from the TOC (Theory of Constraints) approach of buffer level alerts using the colours of a traffic light. In caution of over simplification, red is bad, yellow requires some replenishment action, and green is hold. On-boarding a new supply planner will never be easier. It will be a hit with millennials.



Source: Demand Driven Institute

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DDMRP specific terminology and algorithms. It includes the colour coding, alerts, and warnings as prescribed by the Demand Driven Institute (DDI).

SO, NO MORE SALES FORECASTING?

Does DDMRP mean no more sales forecasting? It is true that DDMRP removes the importance of accurate sales forecasts to generate supply plans. In many companies this is a valuable advantage of DDMRP. For reasons too numerous to mention here, accurate sales forecasting is becoming more difficult; consuming more effort; and requiring more mature processes and complex data sets than ever before.

Within the Demand Driven model, a supply order is only initiated in the event of a buffer position indicating such. A sales forecast does not impact inventory buffers therefore it cannot influence a supply event. An exemption to this rule is the case where forecasting outputs contribute to the calculation of the average daily usage, which consequently influences the size of the buffer.

In summary, it is true that the need for accurate SKU based short-term forecasting is diminished, however forecasting is still important for tactical and strategic planning, as well as supporting the Sales and Operations Planning/Integrated Business Planning process. This may be performed at an appropriate product family level which subsequently reduces the forecasting data volumes and is more accurate than a SKU level forecast.

AND, NO MORE MRP, APS, JIT, LEAN...?

Although there is zero doubt that DDMRP is a major advancement on traditional MRP, DDMRP is not a single shot panacea for all manufacturing planning challenges. In complex supply chains where inventory cost and service level are not the leading measuring sticks of success and the material constraints are more complex than lead-time, the advantages of DDMRP may be less tangible. Examples of such supply chains may include:

- Supply Chains with seasonal push-supply, such as dairy, meat and poultry, fruit and vegetables.
- Process manufacturing with product characteristic blending and inverse (disassembly) bill-of-materials.
- Asset intensive supply chains such as cement, grain, and minerals.
- Supply Chains with both high demand variance combined with high forecast accuracy.
- Supply Chains with dynamic sourcing with different replenishment parameters (lead-time, MOQ, cost)

DDMRP is only one of a number of planning methodologies supported by the DSCP solution. The appropriate methodology for a given supply chain will be influenced by multiple factors. These may include customer order horizon, demand variability, product volume, supply availability, and the company's supply chain maturity. QAD DynaSys Professional Services experts will provide advice on the appropriate technique for a given product portfolio based on their expertise and experience.

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CONCLUSION

There is no doubt that DDI's DDMRP certification is the global benchmark in demand driven planning and execution technology. QAD DynaSys expects that several of its peers in this technology space will have an awakening moment and will start playing DDMRP catch-up.

“...So far in 2017, Gartner has taken more client inquiries on DDMRP than in the entire 2012 through 2016 time frame...”³

QAD DynaSys is committed to the ongoing investment into the DDMRP journey of continuous improvement. This will not only involve additional RandD investment, but also renewed talent development such as the CDDP (Certified Demand Driven Planner) accreditation of the QAD DynaSys professional services teams.

However, it is equally essential to recognise that DDMRP is not about the plug and play of certified technology. The adoption of a Demand Driven Operating Model requires a holistic approach. It is not something that can be done in part without considering technology, talent, and process.

DSCP provides a solid supporting mechanism however like painting a wall, the success is in the preparation.

This includes having accredited talent on the planning team (not only the implementing team) and using experts to perform the supply chain modelling and determine the optimal placements of strategic inventory buffers. To mitigate against the risks of change and to quantify the business value, customers often choose to perform extensive pilots of DDMRP prior to an enterprise roll-out.

QAD DynaSys is the perfect DDMRP business partner on your DDMRP journey, providing all aspects of DDMRP; accredited technology, certified professional services, proven track record, and a global presence.

¹ Carol Ptak Demand Driven Institute

² Chad Smith Partner, Demand Driven Institute
October 2017.

³ 2017-10-05. Gartner, Enable Your Technology to Support Supply Chain Planning Concepts Like DDMRP



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