

Innovation with a Capital “I” An Alternative to Traditional Planning



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Integrated Business Planning
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Agenda

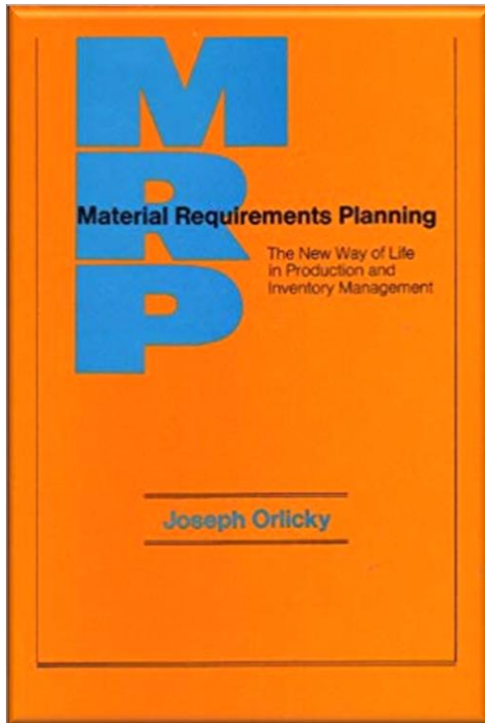
The Demand Driven MRP concept

DDMRP Fundamentals

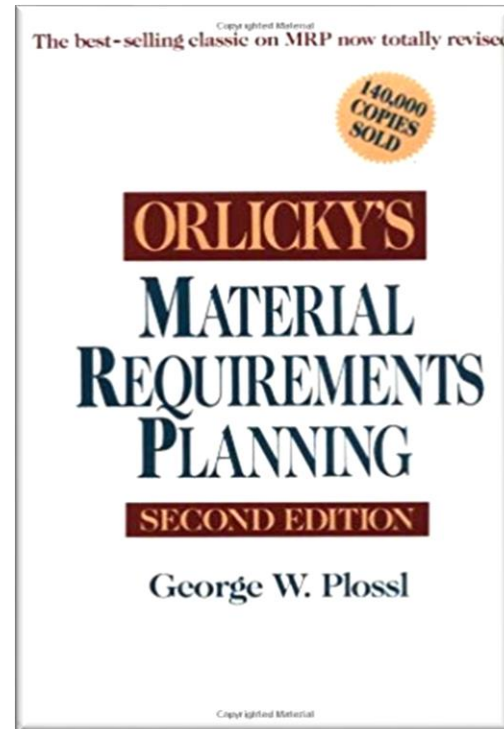
SAP DDMRP Strategy

MRP to DDMRP: a short history lesson

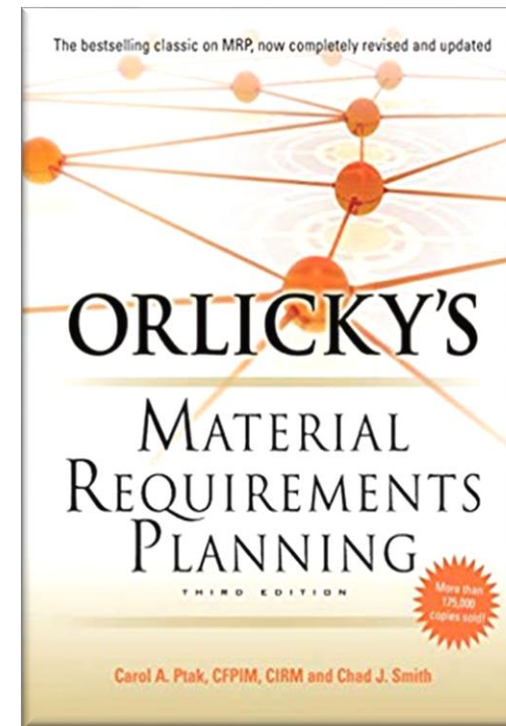
1975



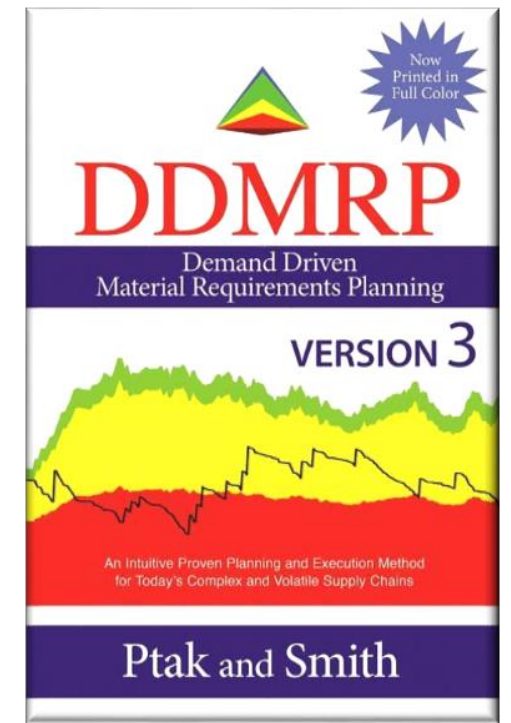
1994



2011



2016



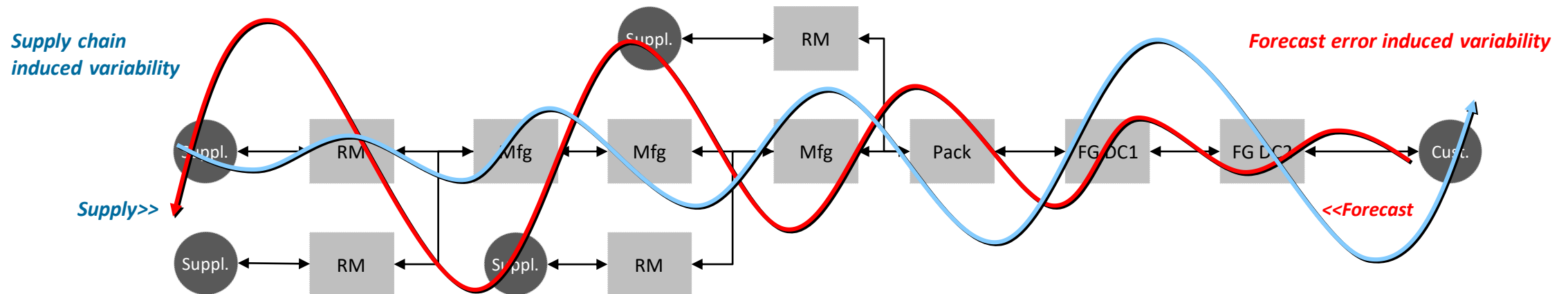
The Bullwhip Effect

Reality!

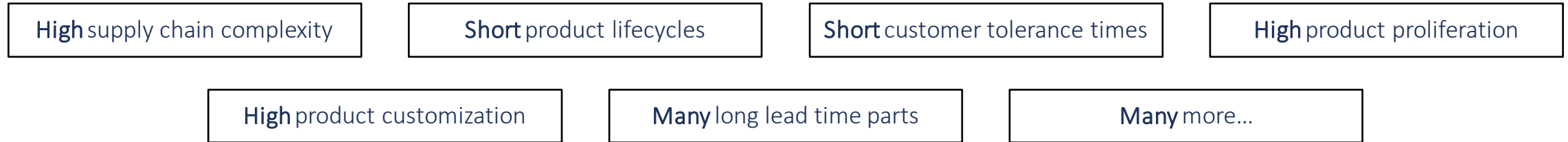
Demand is **volatile**,
Forecasts are **wrong**,
Lead times **vary**



Traditional planning facilitates the amplification of variability in the supply chain



The world has changed since MRP was introduced in the 1950s...



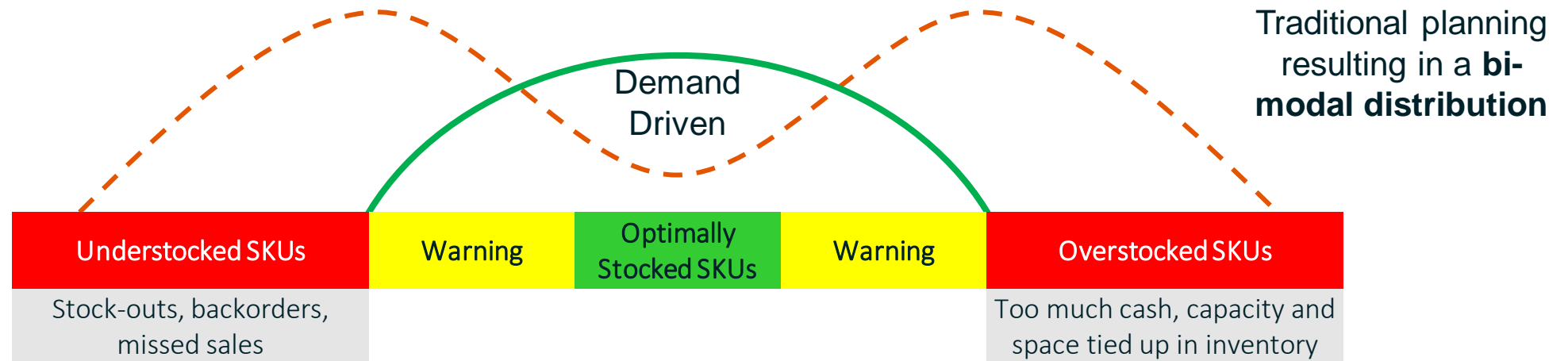
Variability, Uncertainty, Complexity, Ambiguity / Slow & disruptive response

Inventory & Service Challenges

Classic (forecast-driven) planning

What I Have

- *I have too much stock of the products I don't need.*
- *I have too little stock of the products I need.*
- *I have high expedite or over-time expenses*
- Overall *I have too much stock*. Nevertheless, *I cannot fulfill my customer orders (in time and quantity)*



What I want

- *Best possible customer service levels ...*
- *... at lowest possible (total supply chain) costs*



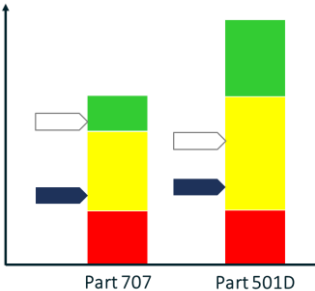
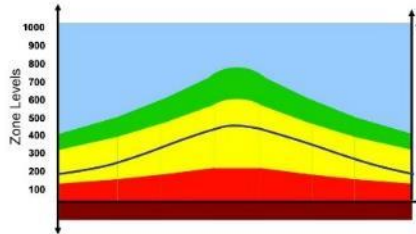
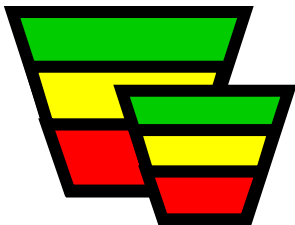
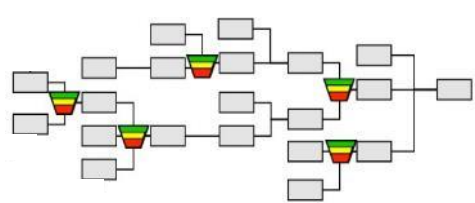
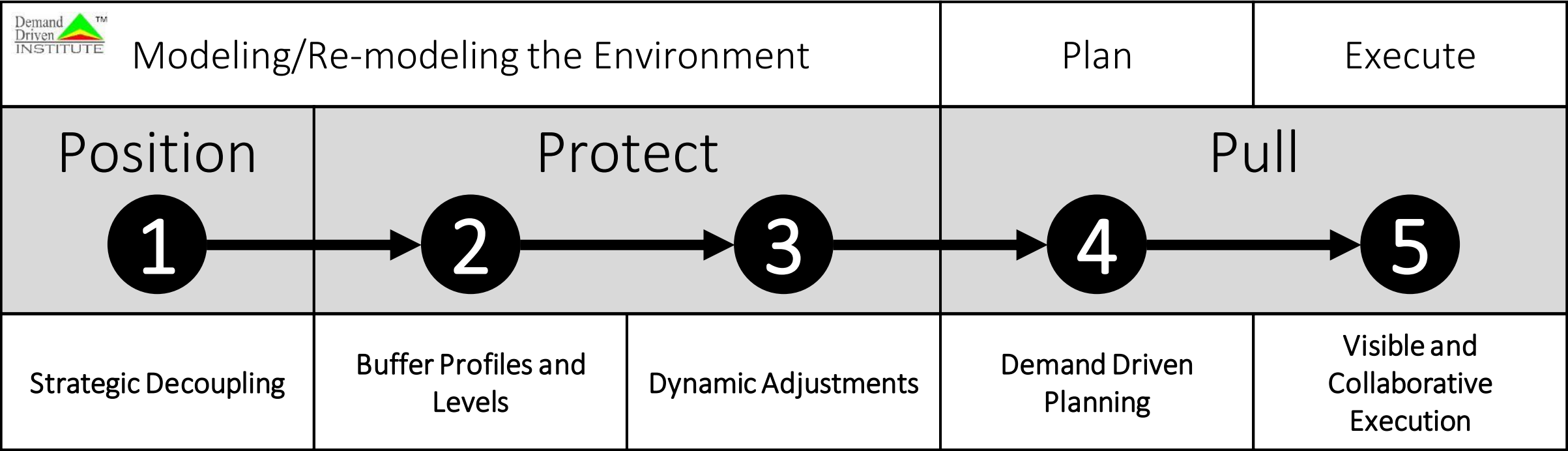
Agenda

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DDMRP Fundamentals

SAP DDMRP Strategy

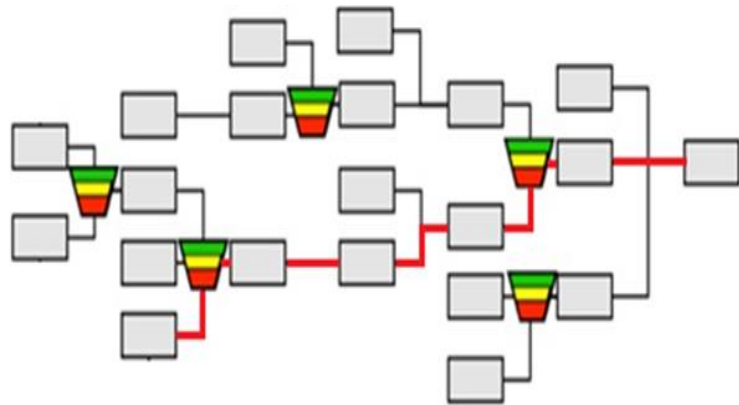
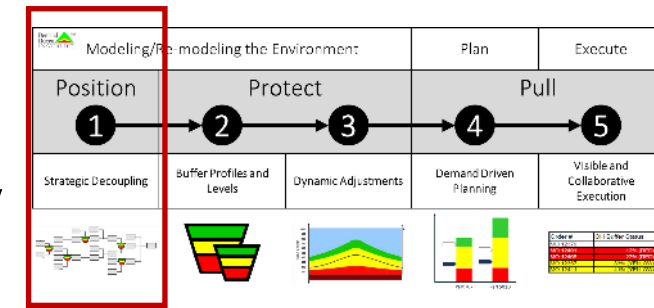
DDMRP consists of 5 components and forms the basis of the demand driven operating model



Order #	OH Buffer Status
MO 12379	
MO 12401	12% (RED)
MO 12465	27% (RED)
MO 12367	33% (YELLOW)
MO 12411	41% (YELLOW)

Source: Demand Driven Institute: used by permission

As a first step, decoupling points within the product structure and supply chain have to be placed strategically



- ▶ It has to be decided where inventory buffers should be positioned
- ▶ This question must be answered before sizing the inventory
- ▶ Related to Bills of Materials as well as facilities/locations



Factors influencing location of decoupling points

Step 1 – Strategic Inventory Positioning at Decoupling Points

DDMRP Buffer Analysis

Transportation Lead Time Change 1

Transportation Lead Time Change 1

Planning Area Name: DDMRP1
Planning Area Description: DDMRP copied from prerelease SAP8
Version: Baseline

Operator Status: Finished

Summary

Key Figure	Total Results				Filtered Results			
	Baseline	Scenario	Delta	% Deviation	Baseline	Scenario	Delta	% Deviation
Decoupled Lead Time (in we...	1.00	1.02	0.01	1.30%	1.14	1.21	0.07	6.25%
Average On-Hand	2,184,479.79	2,266,425.56	81,945.77	3.75%	37,789.64	26,254.17	-11,535.46	-30.53%
Average On-Hand Value	13,141,840.63	13,758,223.17	616,382.53	4.69%	290,790.23	199,660.50	-91,129.73	-31.34%

Decoupling Points (6)

Filtered By: Product Location

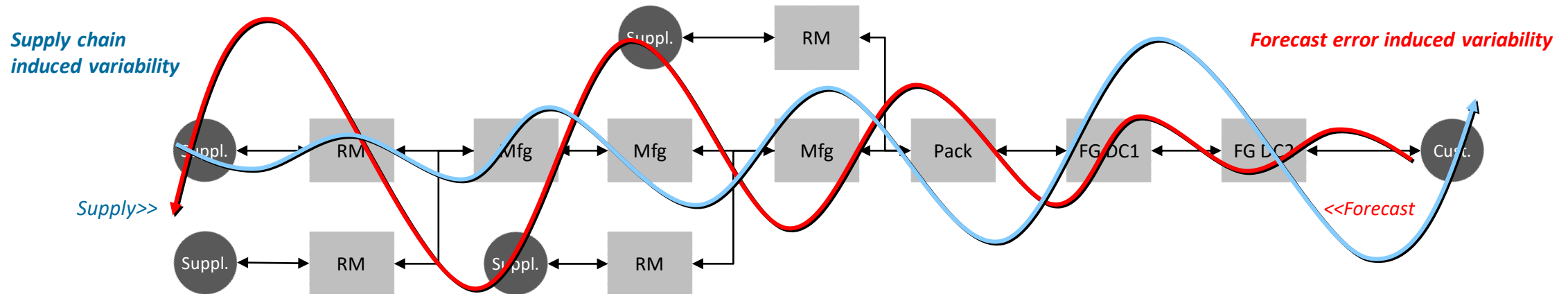
Product ID	Location ID	Buffer Pro...	Decoupling Point		Decoupled Lead Time (in weeks)			Average On-Hand			Average On-Hand Value		
			Baseline	Scenario	Baseline	Scenario	Delta	Baseline	Scenario	Delta	Baseline	Scenario	Delta
DD-200	S100	DLM	✓	✓	1.00	1.00	0.00	16,741.11	16,412.86	-328.25	102,245.55	102,245.55	0.00
DD-200	S110		✗	✓	0.00	1.25	1.25	0.00	8,527.82	8,527.82	0.00	51,081.65	51,081.65
DD-200	S120		✗	✓	0.00	1.25	1.25	0.00	16,574.64	16,574.64	0.00	99,282.12	99,282.12
DD-220	S100	DMM	✓	✓	1.28	1.28	0.00	58,838.16	57,684.47	-1,153.68	479,334.91	479,334.91	0.00
DD-220	S110		✗	✓	0.00	1.25	1.25	0.00	33,301.26	33,301.26	0.00	266,077.07	266,077.07
DD-220	S120		✗	✓	0.00	1.25	1.25	0.00	25,023.98	25,023.98	0.00	199,941.67	199,941.67

Save Scenario Start Scenario Save to Baseline Reset

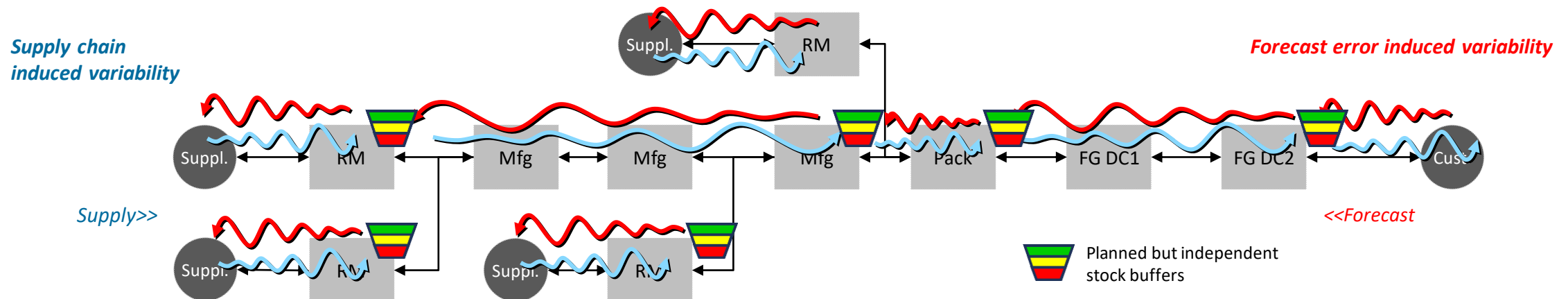
Proposed Decoupling Points; Simulate Manual Changes

A move towards Demand-Driven Planning can dampen variability and its amplification (bull-whip) in today's volatile world

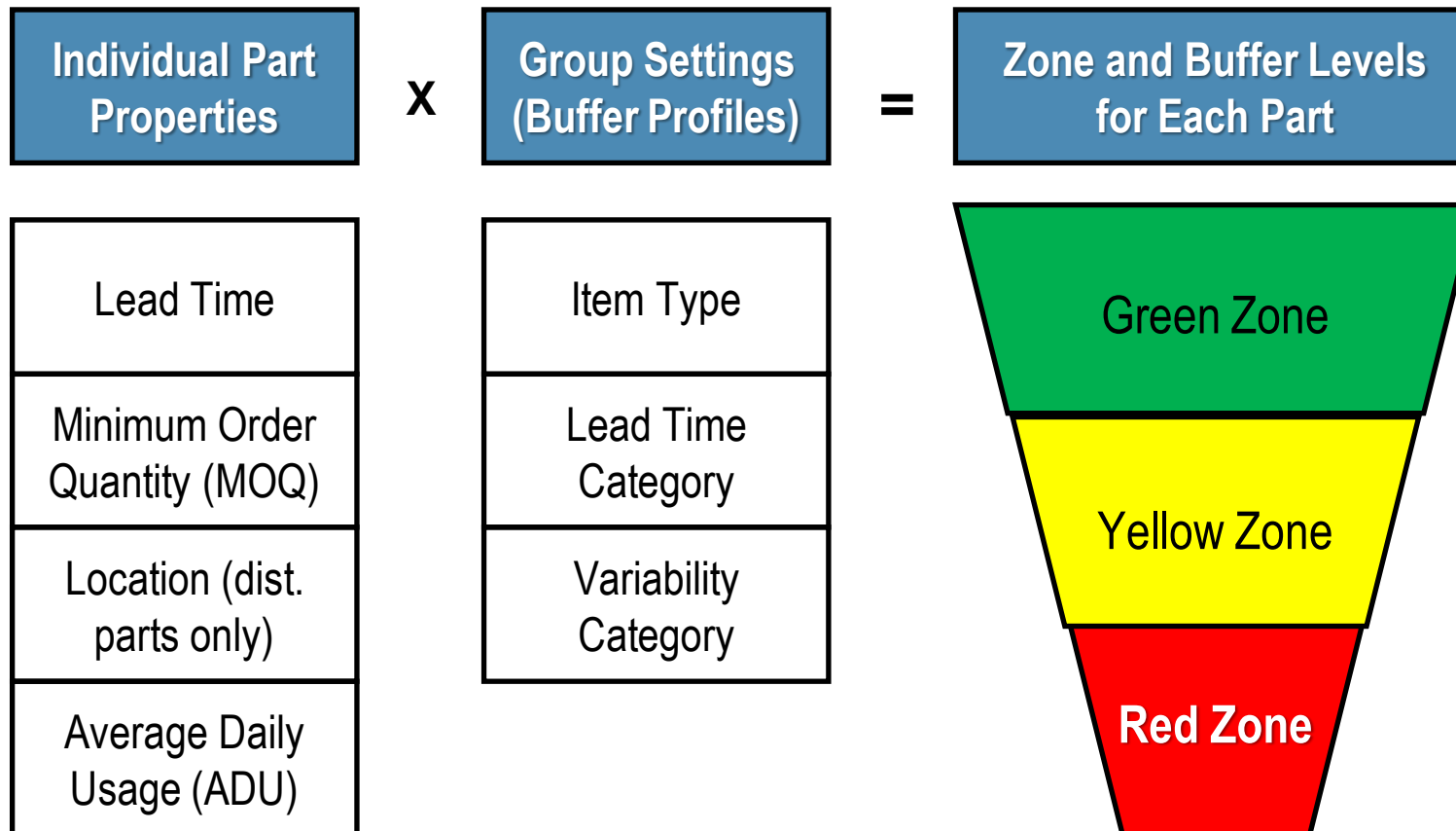
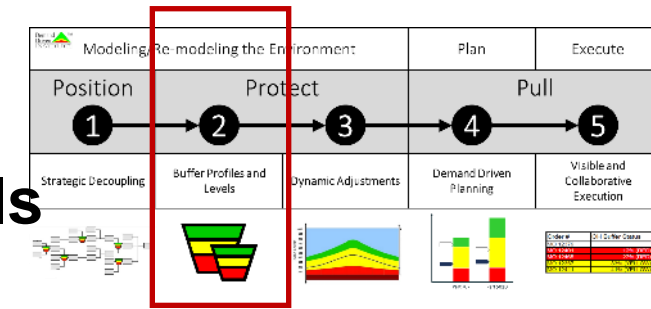
Traditional planning facilitates the amplification of variability in the supply chain



DDMRP uses strategically positioned stock buffers and pull replenishment to achieve stable material flow



Replenishment buffers are calculated based on individual part properties and buffer profiles, resulting in buffer levels for each part/location decoupling point

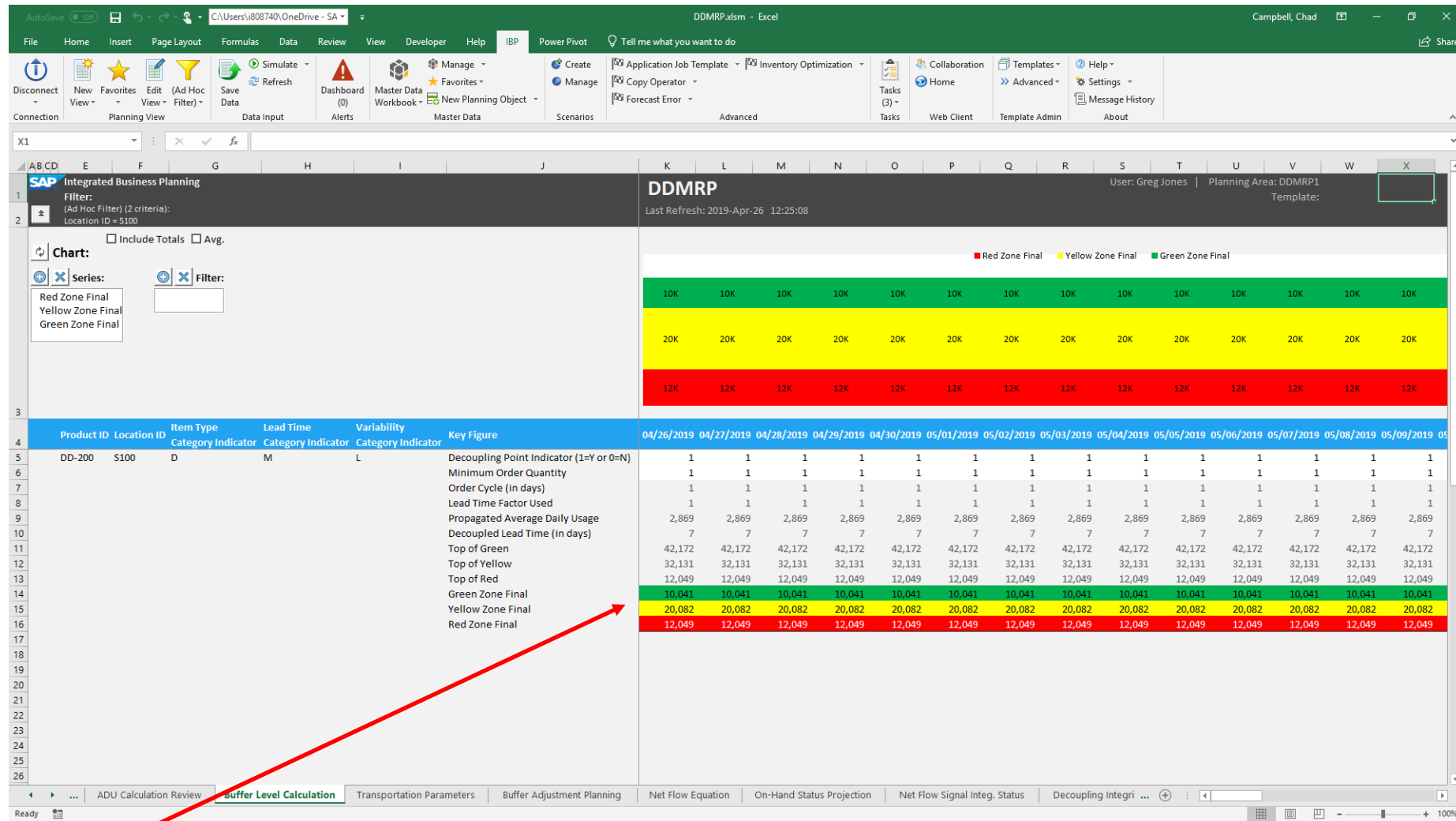


The heart of the order generation aspect of the buffer, determining the frequency of order generation and the minimum size of each order

The heart of the demand coverage in the buffer

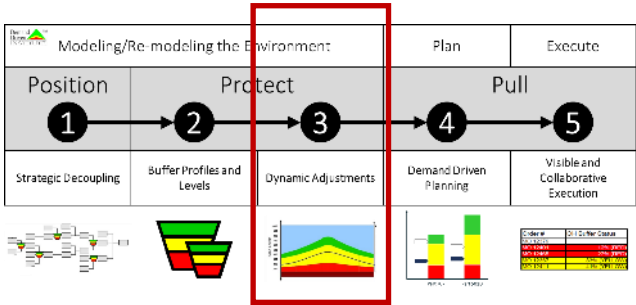
The safety embedded in the buffer position

Step 2 – Buffer Profiles and Levels

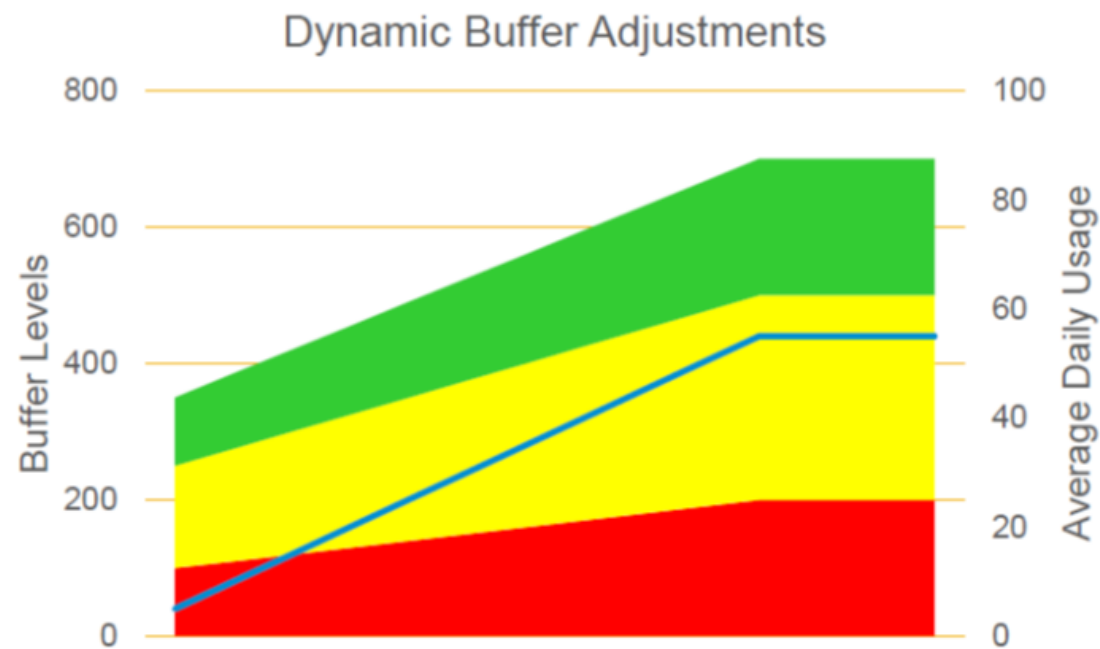


System Calculated Buffer size

Dynamic adjustments

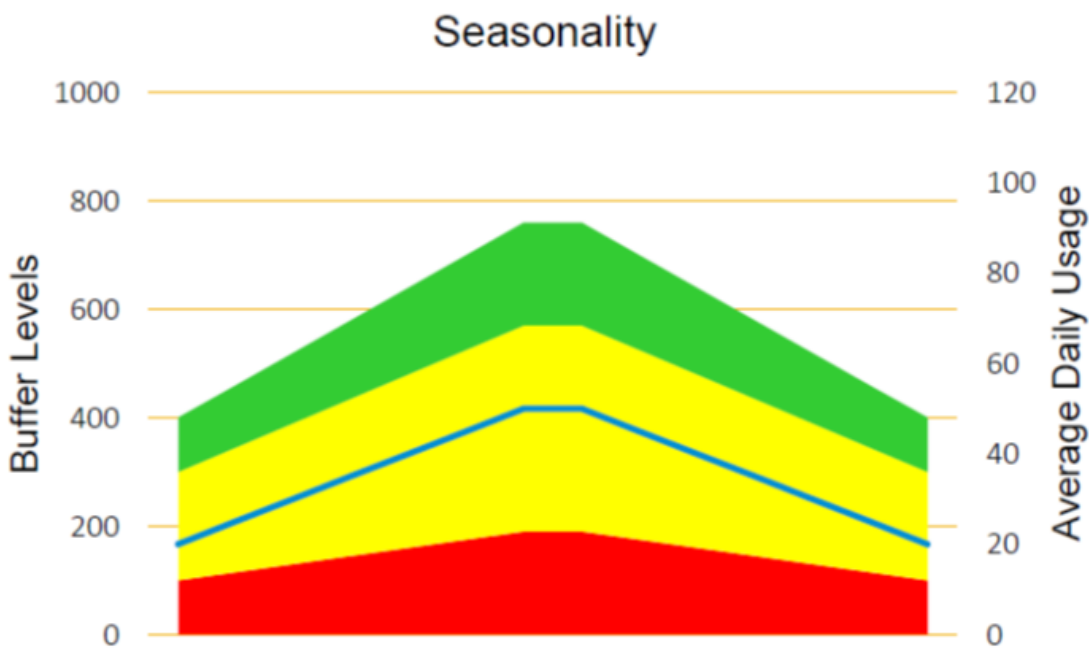


ADU-based recalculation of the buffer

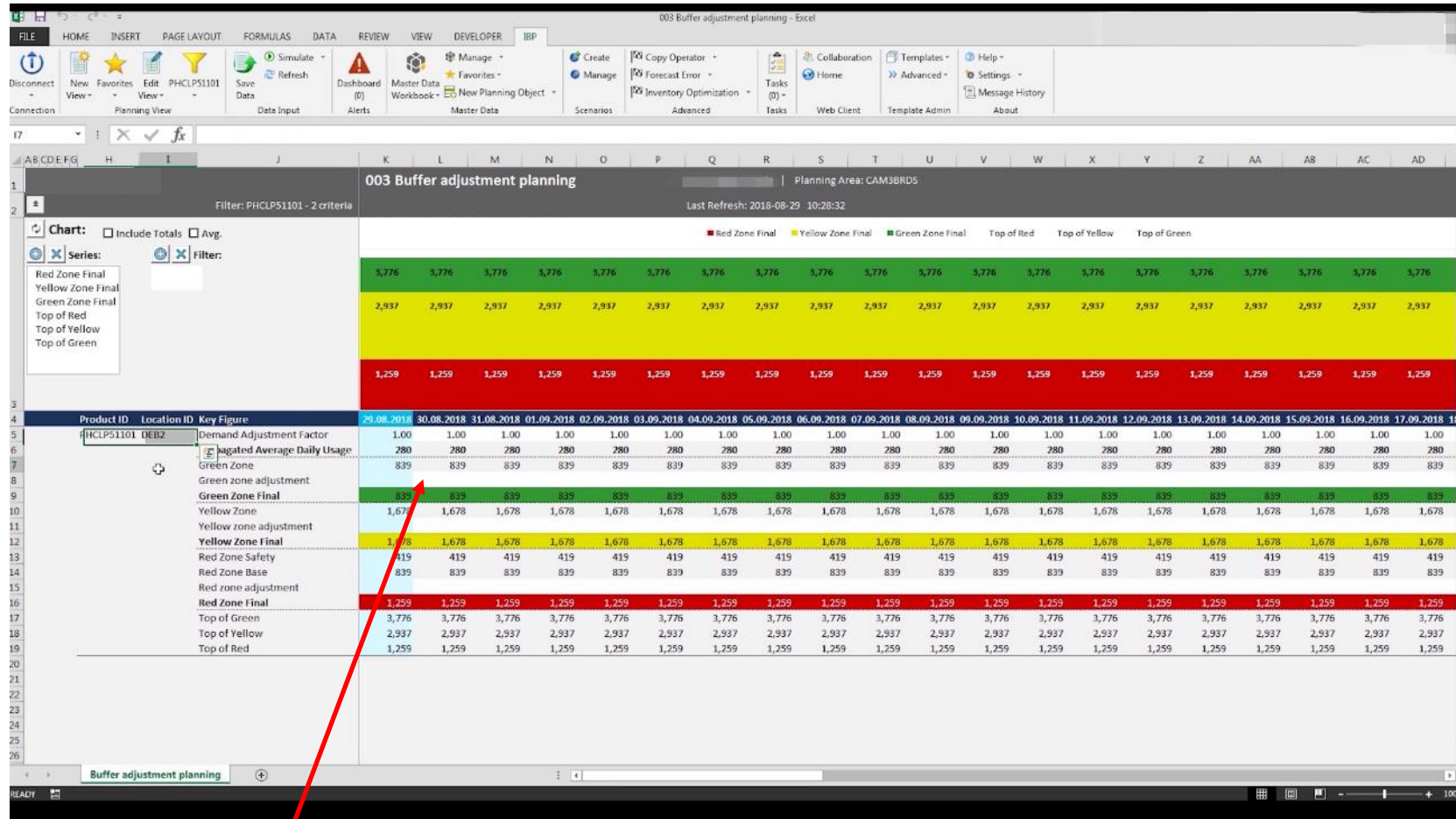


„Forecast used for the buffer calculation“

Manual adjustment of the buffer

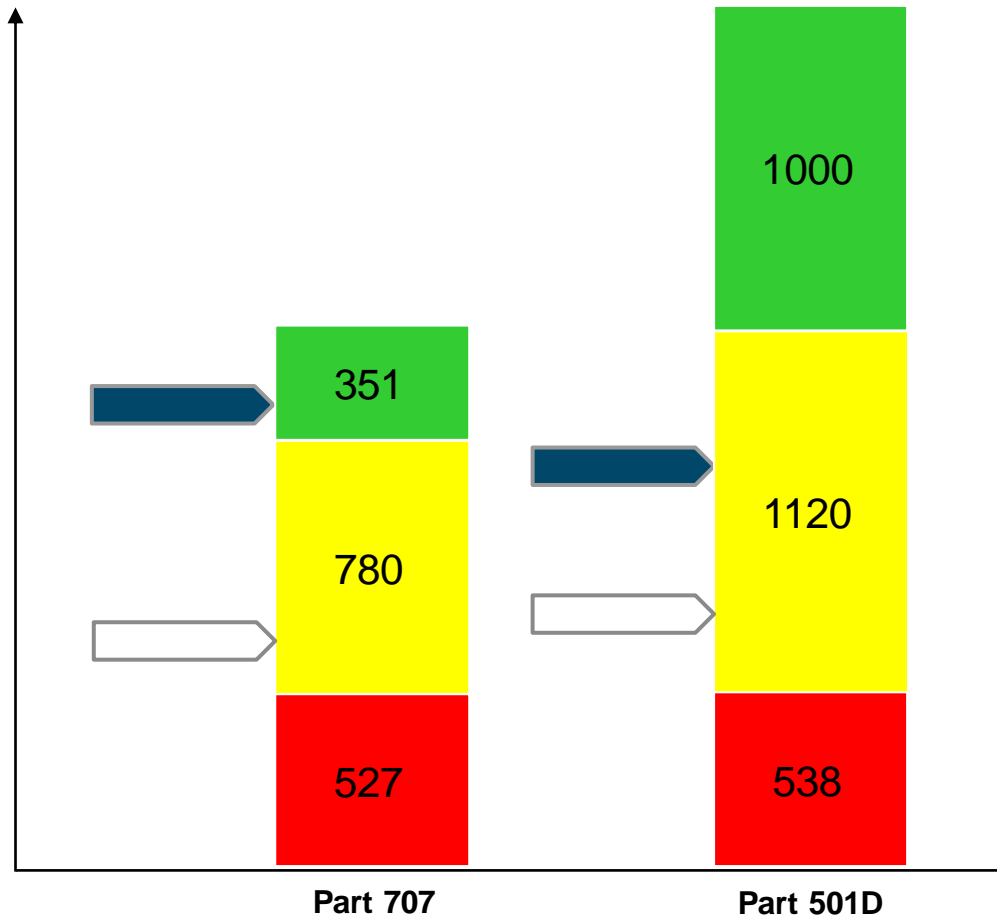


Step 3 – Dynamic Adjustments



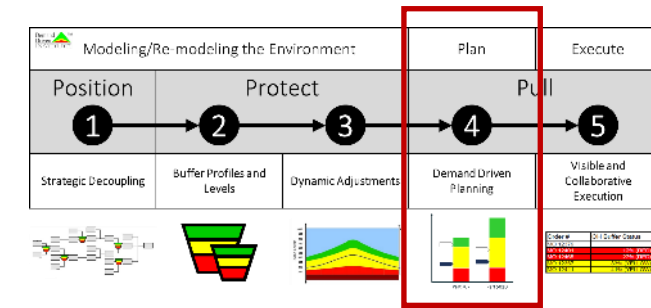
User time-dependent adjustments

Supply for a part is determined by its Net Flow Position relative to its buffer and zone levels



 Net Flow Position
 Actual on-hand

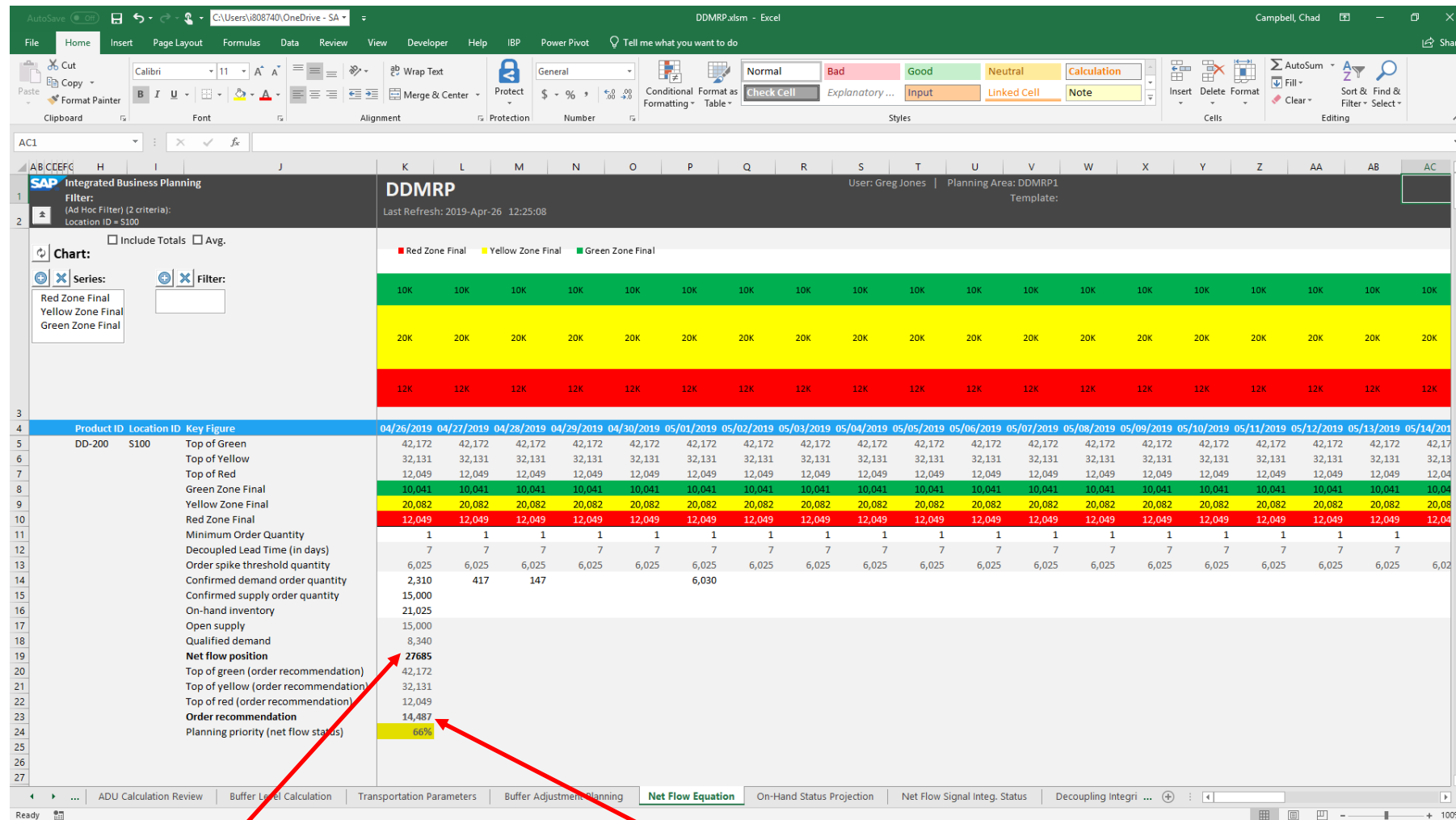
Net Flow position =
 On-hand + On-order -
 "Qualified sales order demand"



- ▶ Depending on the net flow position, different actions are possible
 - ▶ Green: No action
 - ▶ Yellow: Place new order
 - ▶ Red: Expedite open supply and/or place new order
- ▶ Recommended Order quantity is the quantity to bring the available stock position to the top of green

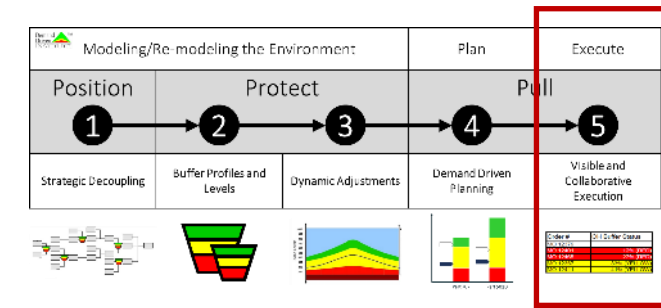
DDMRP Planning						
Part	On Hand	Open Supply	Demand	Net Flow Position	Recommend Supply Qty	Action
				1400 (84%)		
				1300 (49%)		

Step 4 – Demand Driven Planning



Based on Net Flow Position, Propose Replenishments

Visible and Collaborative Execution



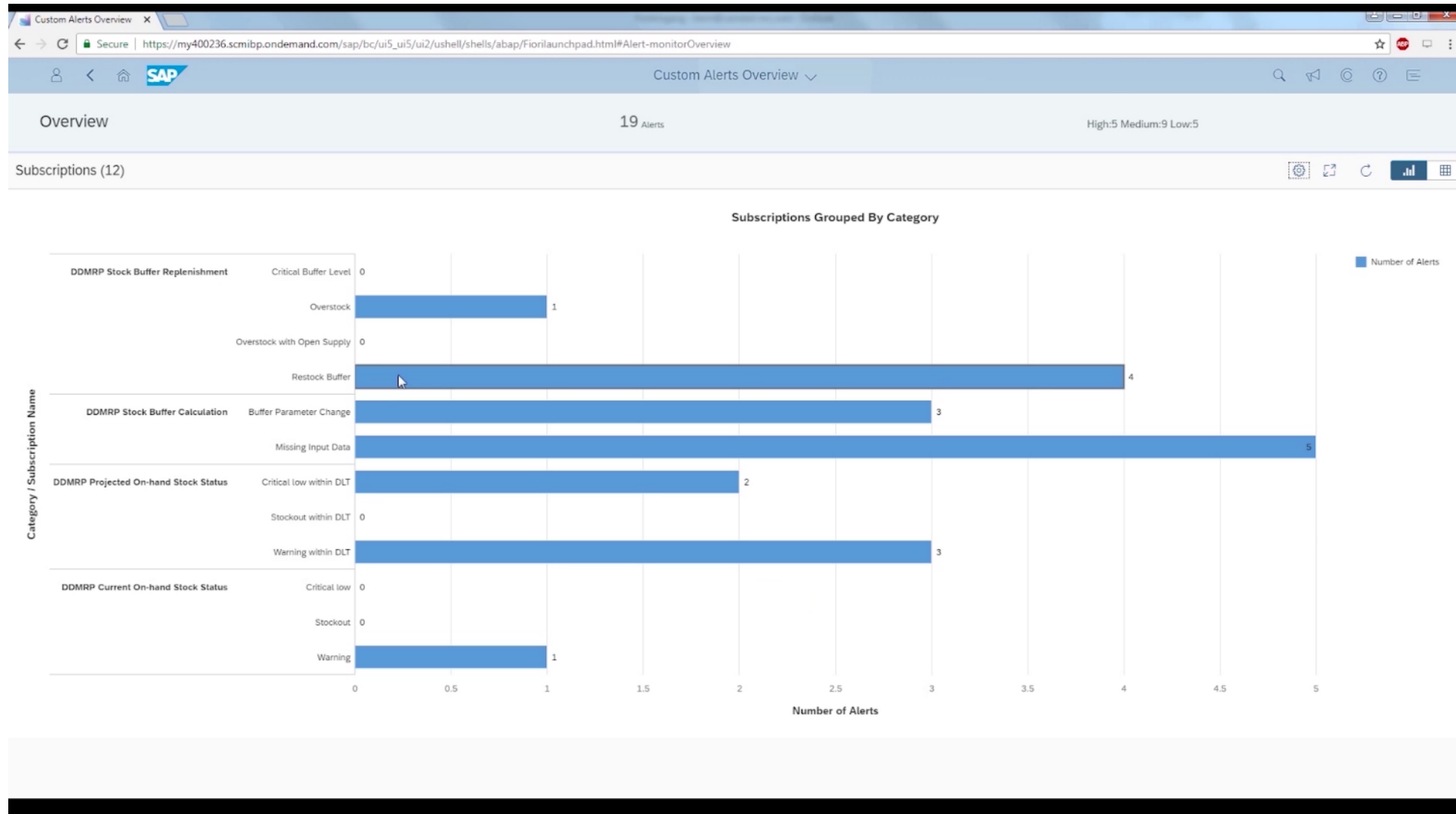
Orders prioritized by buffer status

Order #	Due Date
PO 276-54	05/12
PO 279-84	05/12
PO 280-89	05/12
PO 281-21	05/14
PO 275-44	05/16

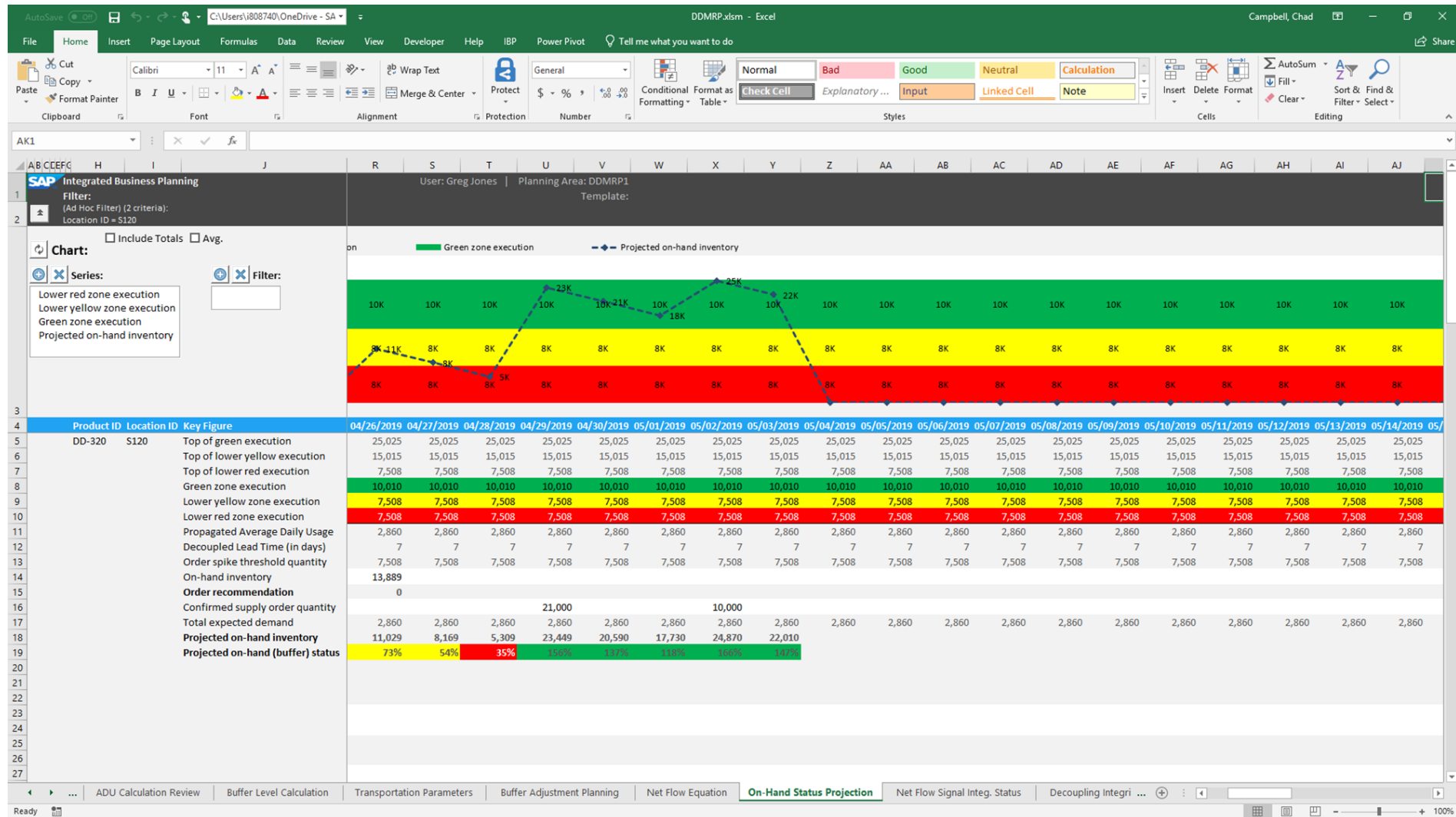
Order #	OH Buffer Status	Due Date
PO 275-44	3%	05/16
PO 281-21	17%	05/14
PO 276-54	27%	05/12
PO 280-89	47%	05/12
PO 279-84	54%	05/12

- Generate clear visibility for **relative priorities** to determine **execution priority**
- Avoid manual workaround or disconnected subsystems and massive daily efforts of analysis and adjustments for actual priority determination
- Provide sequence for orders in manufacturing
- Make full use of strategically positioned decoupling points / stock buffers

Step 5 – Visible and Collaborative Execution

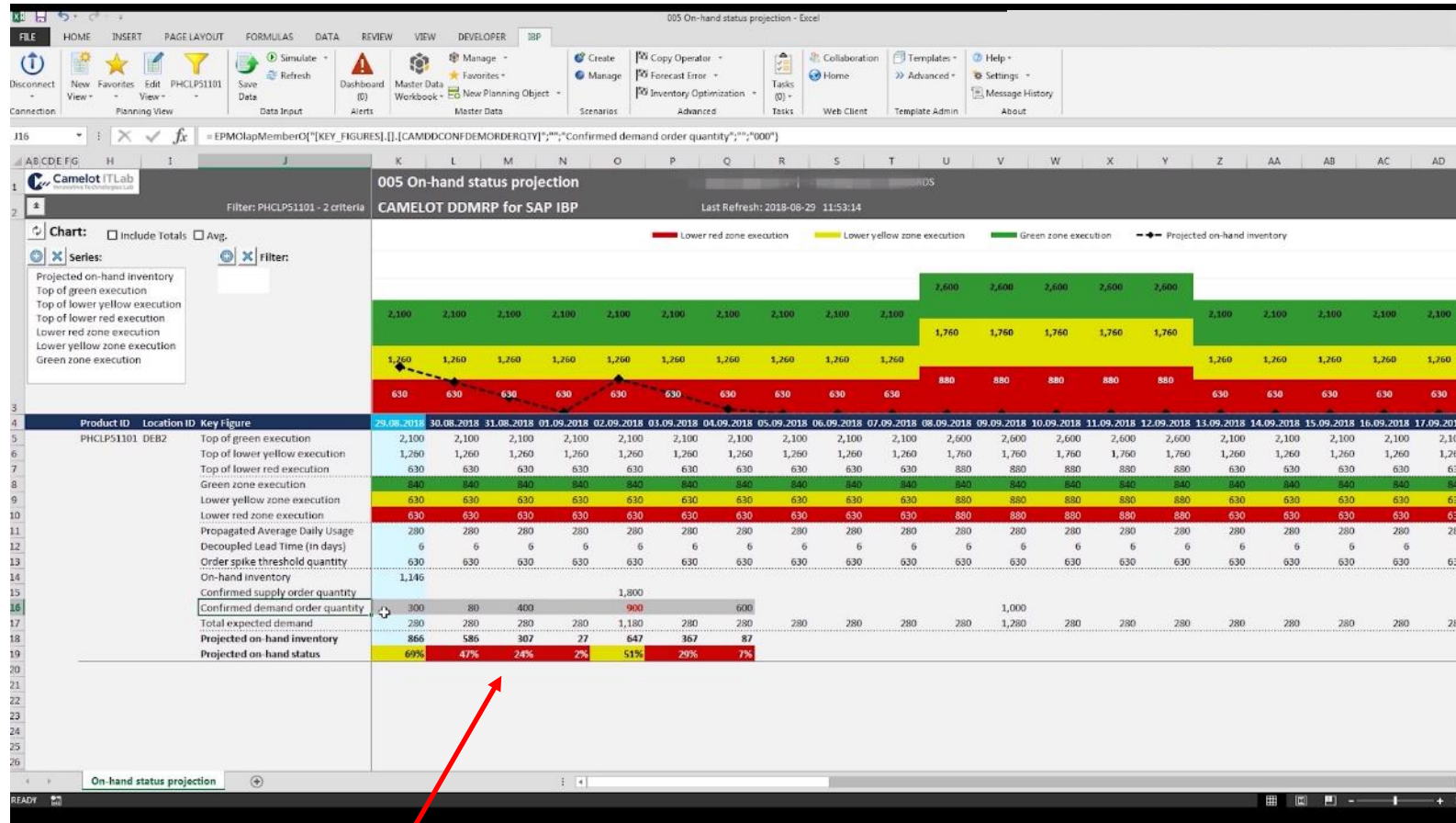


Step 5 – Visible and Collaborative Execution



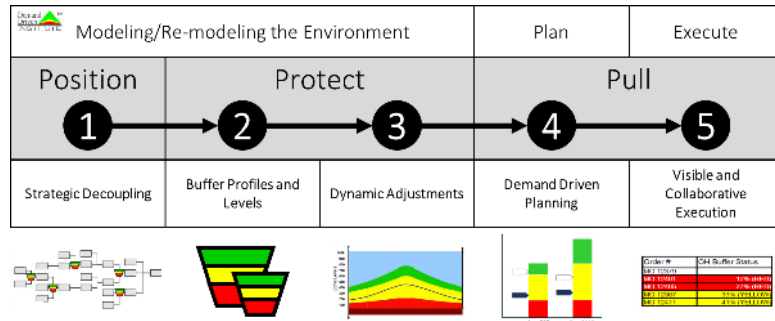
Monitor projected inventory and on hand buffer penetration

Step 5 – Visible and Collaborative Execution



Execution Monitoring / Alerting: buffer levels going low

The Demand Driven Institute states key benefits and substantial improvement potentials by the use of DDMRP



Improved customer service:

Users consistently achieve a high on time fill rate performance

Lead time compression:

Lead time reductions have been achieved in several industry segments

Right-sized inventory:

Inventory reductions are achieved while improving customer service

Lowest total supply chain cost:

Costs related to expedite activity and false signals are largely eliminated

Easy and intuitive:

Planners see priorities instead of constantly fighting the conflicting messages of MRP

Source: Demand Driven Institute



Agenda

The Demand Driven MRP concept

DDMRP Fundamentals

SAP DDMRP Strategy

SAP Considers the DDAEM a Strategic Direction in Supply Chain Management

SAP is embracing the Demand-Driven Adaptive Enterprise Model via ...

Two Certified Compliant DDMRP solutions



DDS&OP Certified Compliant Solution!



Questions?

Thank you.



Jay Foster, Director, Solution Management
Integrated Business Planning
March 2021

AGENDA

Time	Topic	Duration
15:00 CEST	The Road to Intelligent Spend Baber Farooq, SVP Procurement Product Strategy	30 min
15:30 CEST	Innovate with Demand-Driven Material Requirements Planning (DDMRP) Jay Foster, Director Solution Management	30 min
16:00 CEST	Procurement across a heterogeneous multi-backend environment Frank Bade, Business Architect and for SAP Procurement Regional Strategy	30 min
16:30 CEST	How Procurement Leaders Can Plan for the Future Mark Harris, Senior Director Product Strategy	30 min
17:00 CEST	End & Poll	

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