

# *Transforming Supply Chains with Advanced MRP & Forecasting*

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*Beyond Just Inventory*



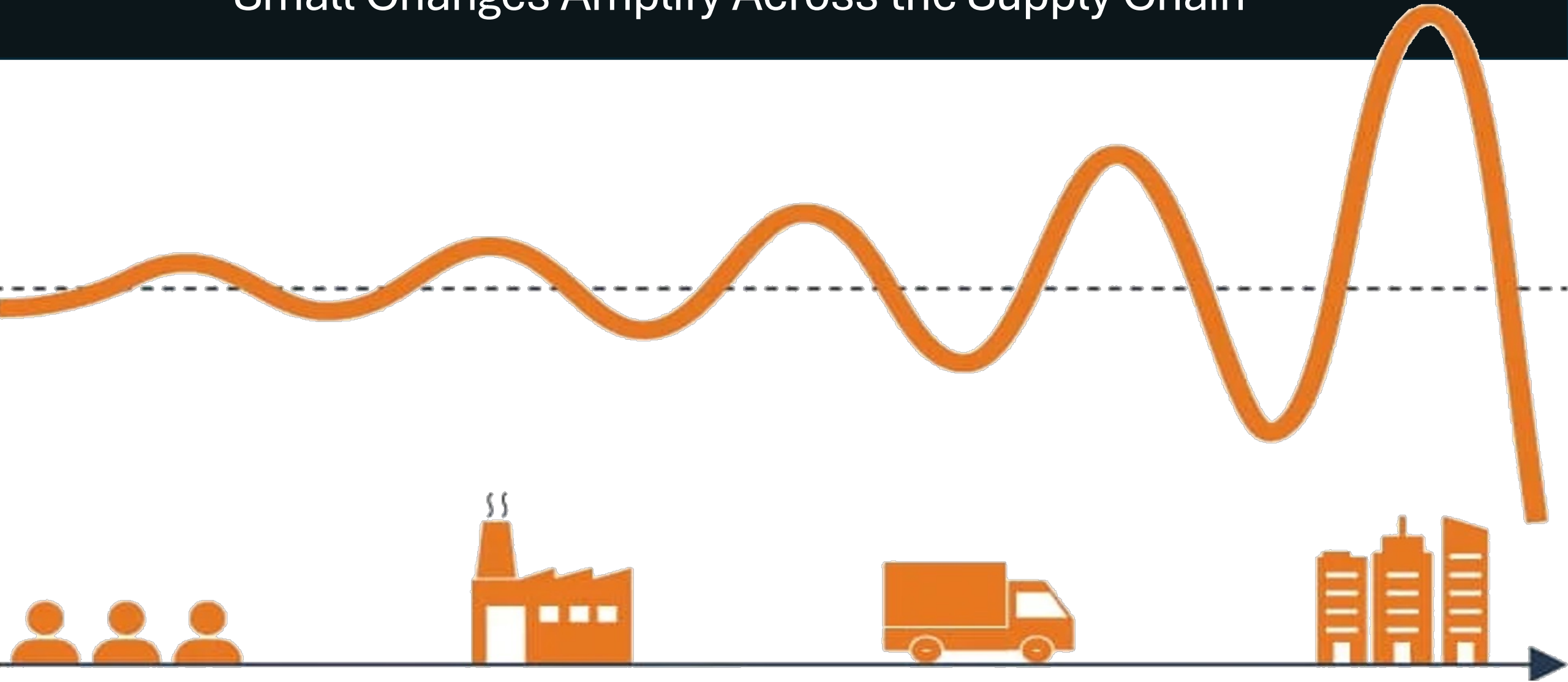
# THE JOURNEY

Seismic Shifts to an Evolutionary Business Landscape



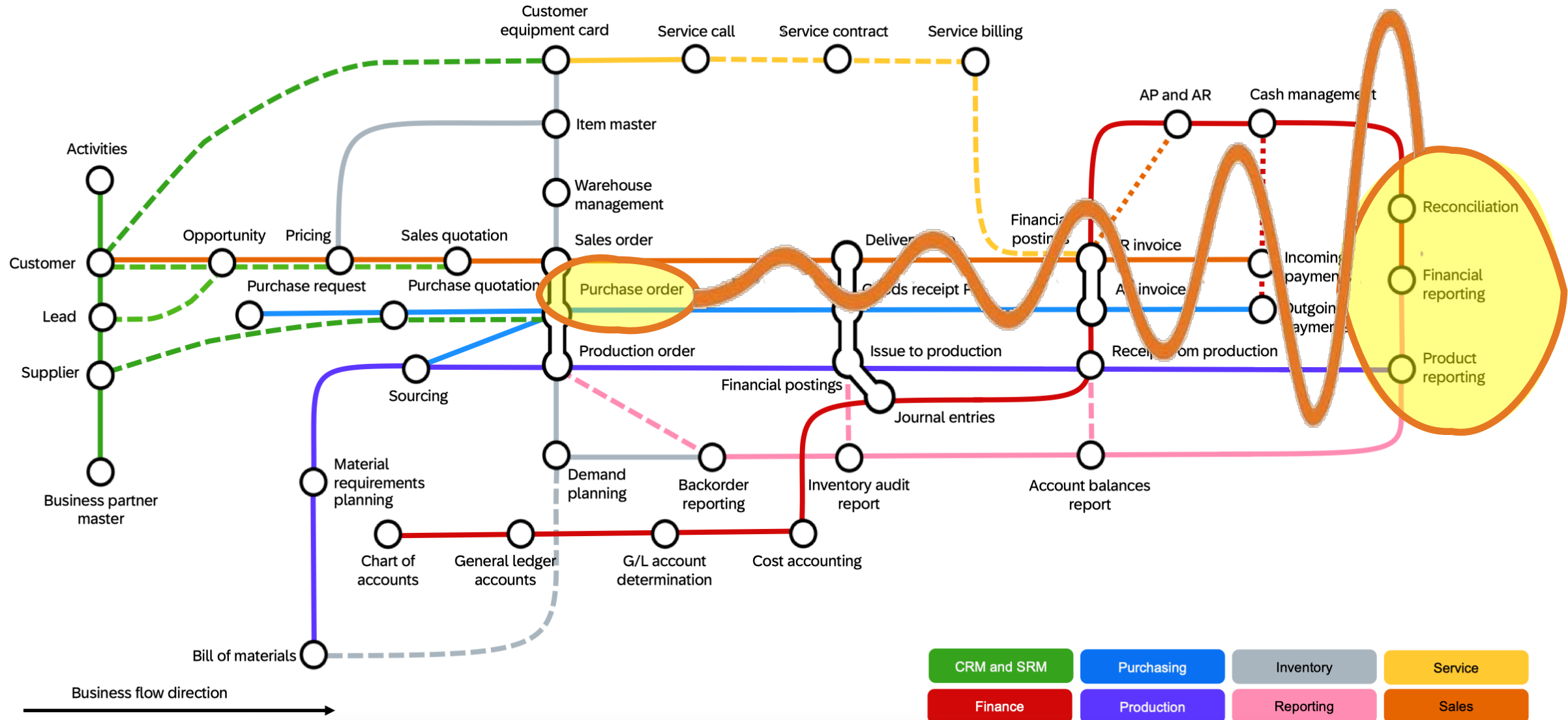
# THE BULLWHIP EFFECT

Small Changes Amplify Across the Supply Chain



# THE BUSINESS FLOW (SYSTEM)

## Small Changes Amplify Across the Organization

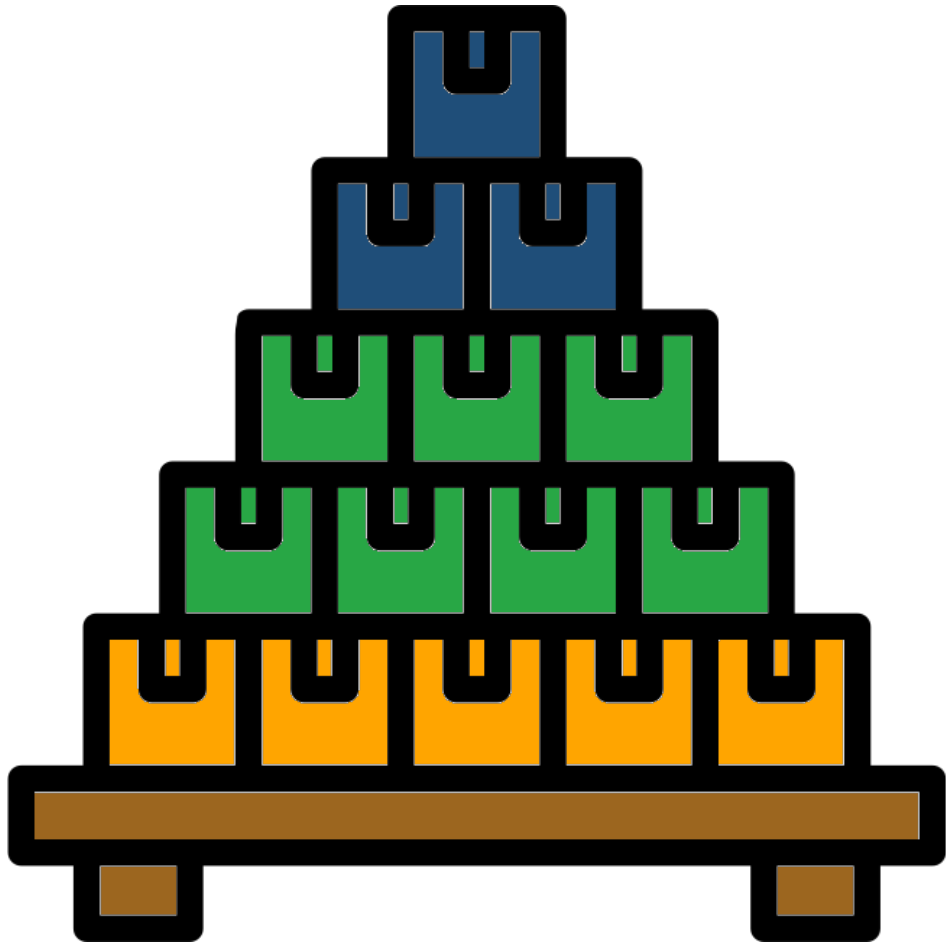


THINK  
BIGGER

(Cash Flow)

# THINK BIGGER

## Sources of Inventory Capital



Debt Financing



Working Capital



Vendor Financing

# WATER TECH 2.0

## Unlocking Profitability Through Strategic Planning

### Working Capital Target: \$5M

- Requires Inventory Reduction of \$2.5M
- \$2M from Converting Inventory Cost to Cash
- \$3M from Profit Generated (at 50% margin)  
*(\$5M Sales - \$2.5M Cost = \$2.5M Profit)*

### Working Capital Benefits:

- Free Working Capital for Water Tech 2.0 Project
- Eliminate Bank Financing
- Eliminate a 3PL
- Reduce Associated Costs (ie Insurance, shrinkage, etc)

### Company Valuation

- Increased EBITDA Impact: +\$5M
- Return from Reallocation of Capital: Higher ROI from deploying freed-up cash into strategic projects, reducing financing costs, or other profitable ventures.



# PRECISION & ACCURACY

(THINK SMALL)

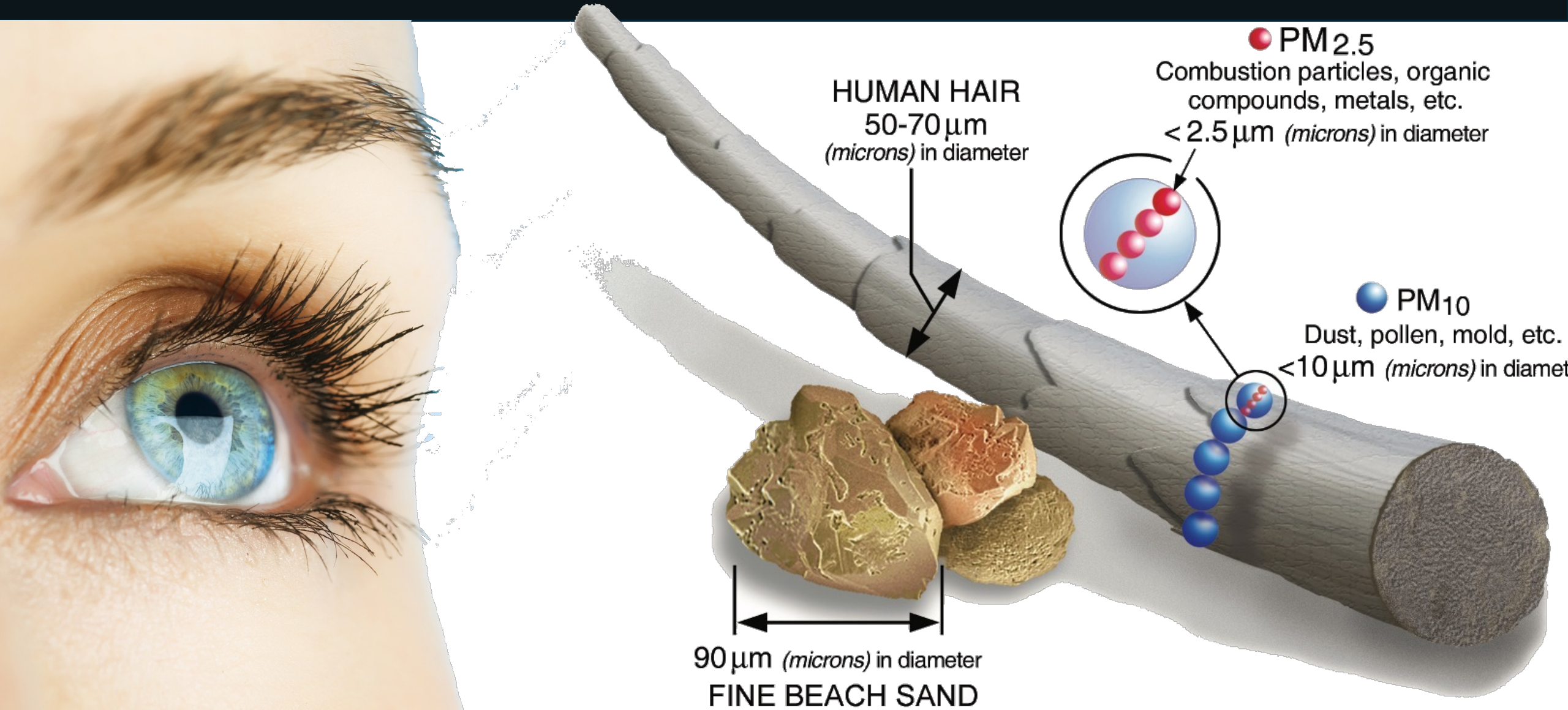
# THE SOLAR SYSTEM

Decimals Amplify Across Space Travel



# THE VISUAL SYSTEM

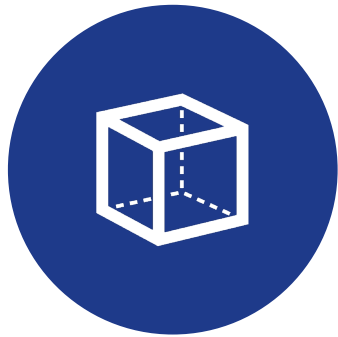
## Microns Amplify Across the Visual System



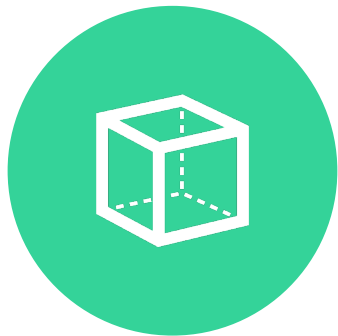
# DATA CUBES PLUS MRP

Stabilize and Control Amplification of Inventory

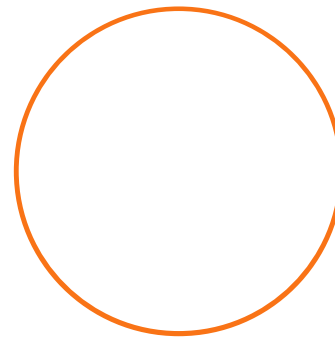
**PRECISION** → **ACCURACY**



**SUPPLY CHAIN CUBE:** Aggregates data from Purchase Orders (PO) to Goods Receipt, providing a complete and precise view of supply-side activities.



**DEMAND CUBE:** Tracks data from the company warehouse to the customer, offering detailed insights into demand patterns and customer needs.



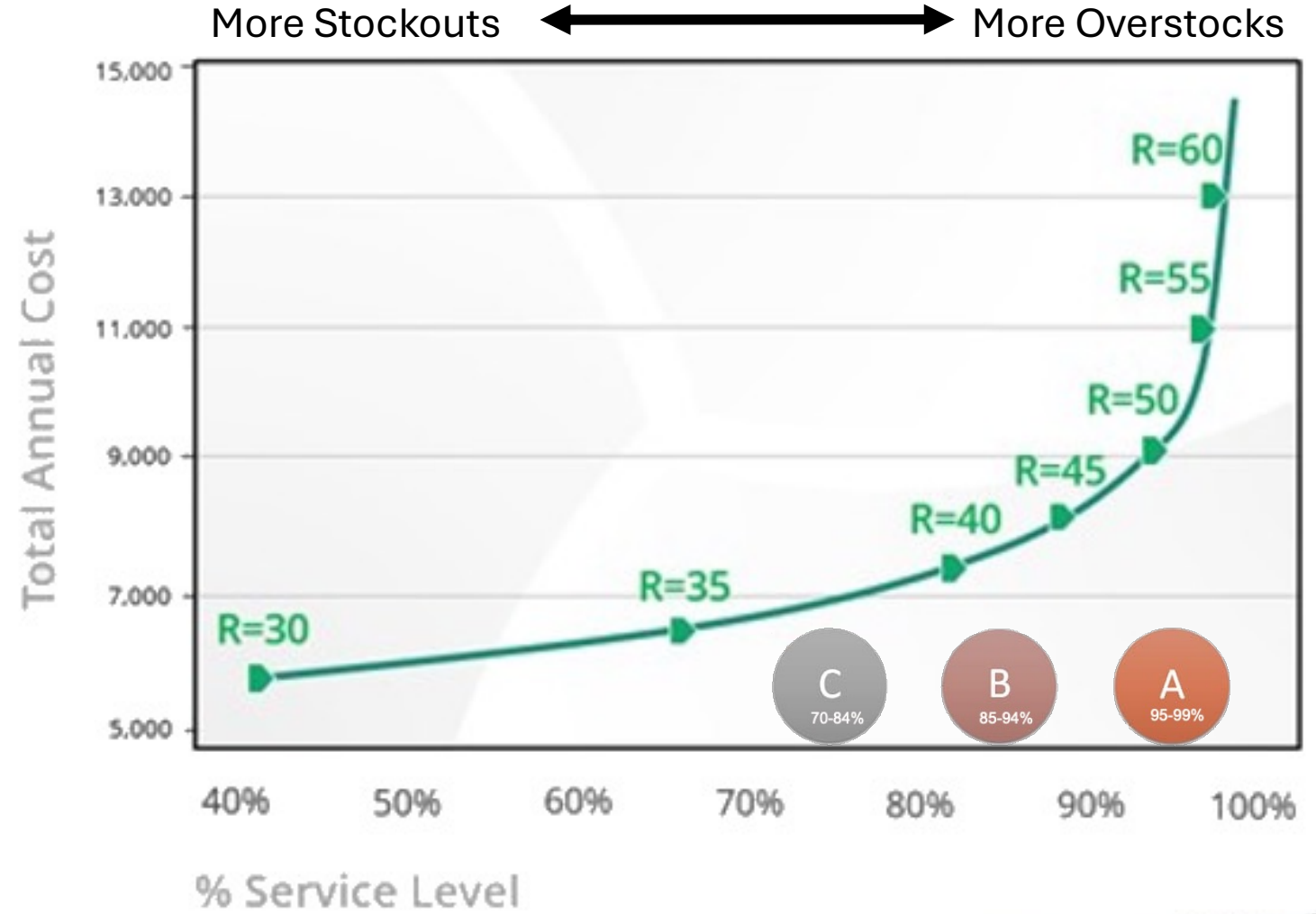
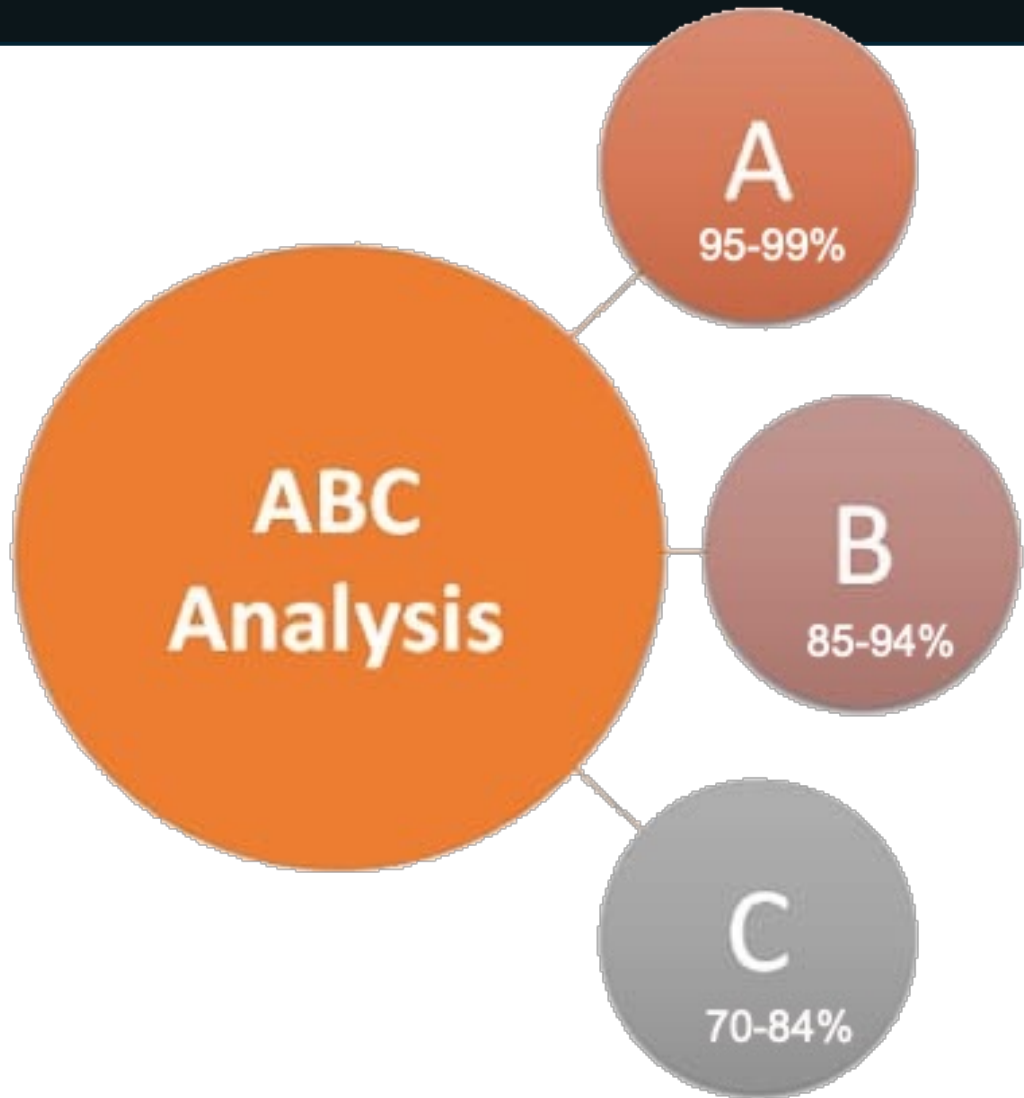
**MRP:** Uses both the Supply Chain and Demand Cubes to make precise, accurate procurement and inventory decisions, ensuring alignment across the entire business.



**Mitigate Error:** The deviations that hinder accuracy, including issues in data extraction, process deviations, statistical formula error, master data inconsistencies, and improper corrections leading to stockouts or overstocks.

# THE MIN MAX SYSTEM

## Prioritizing Stockouts & Overstocks



# THE TAILORED APPROACH

Data Cubes Tailored to Business Requirements

## In-Memory Real-Time Data Cubes

Supply  
Chain  
DataCube

Demand-  
Based  
DataCube

### Forecasting Methodologies

Historical  
Demand  
Forecasting

Insight Driven  
Demand  
Forecasting

### Optimized State

Adaptive  
Lead-  
Times

Multi-  
Warehouse

Container  
Planning

Supplier  
Reqs

Truck  
Stock

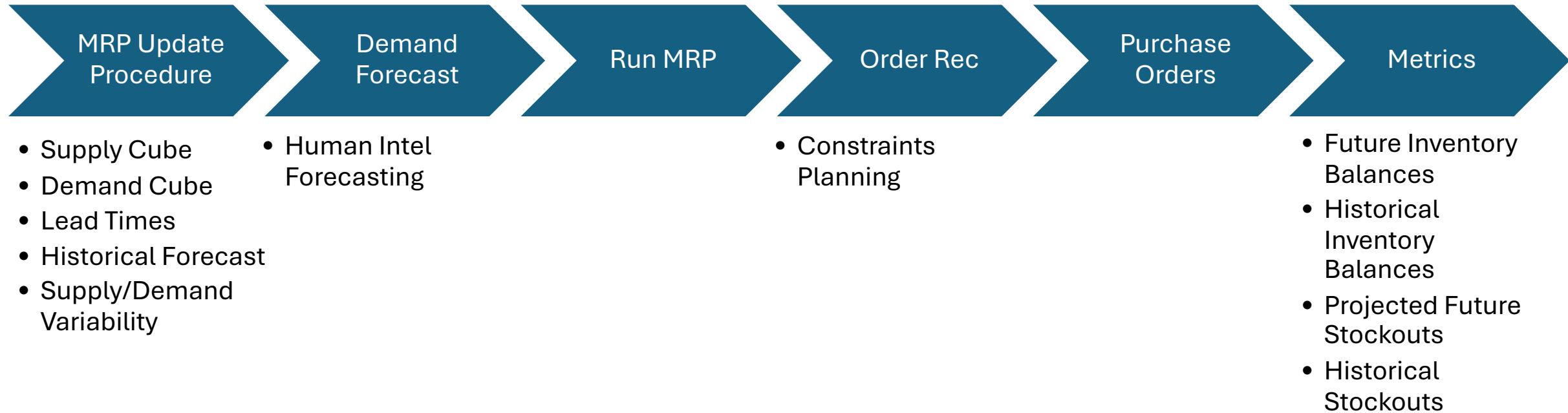
Alt  
Items

Best  
W/H

Exp  
Items

# THE WORKFLOW

## From Data Cubes to Purchase Orders



# DEMAND FORECASTING

## Forecasting By Division & Customer Level

### Update Demand Forecast

ItemName	ItemCode	Forecasting Metric	OCT2024	NOV2024	DEC2024	JAN2025	FEB2025	MAR2025
▶ AQUA BROOM	▶ 388848	▶ FORECASTED (CUMULATIVE)	2205	2220	1680	6430	1230	1230
▶ AQUA BROOM	▶ 388848	▶ FORECASTED (MONTHLY)	0	0	0	0	0	0
▶ AQUA BROOM (100% VOLUME)	▶ 118818	▶ FORECASTED (CUMULATIVE)	470	465	280	260	1100	400
▶ AQUA BROOM	▶ 388848	▶ FORECASTED (MONTHLY)	2075	1350	1348	2730	2600	2790

### Update Forecast Detail - AQUA BROOM - 388848

Division	OCT2024	NOV2024	DEC2024	JAN2025	FEB2025	MAR2025	APR2025	MAY2025	JUN2025	JUL2025	AUG2025	SEP2025	OCT2025
AMAZON	0	0	0	0	0	0	0	0	0	0	0	0	0
GRD	1730	1730	1230	1030	1030	1030	0	0	0	0	0	0	0
INT	400	400	400	5200	200	200	0	0	0	0	0	0	0
PSD	75	90	50	200	0	0	60	150	10	60	10	0	0
MISC	0												
	2,205												

Close

### Forecast vs Actual

ItemName	ItemCode	Division	Forecasting Metric	OCT2024	SEP2024	AUG2024	JUL2024	JUN2024	MAY2024	APR2024	MAR2024	FEB2024	JAN2024	DEC2023
▶ AQUA BROOM	▶ 388848	▶ AMAZON	FORECAST	0	0	0	0	0	0	0	0	0	0	0
▶ AQUA BROOM	▶ 388848	▶ GRD	INVOICED	1184	2452	2909	3769	1167	1712	25	216	0	120	
▶ AQUA BROOM	▶ 388848	▶ INT	FORECAST	1730	2500	64	112	272	480	528	216	0	0	
▶ AQUA BROOM	▶ 388848	▶ GRD	DIFFERENCE	-546	-48	2845	3657	895	1232	-503	0	0	120	
▶ AQUA BROOM	▶ 388848	▶ GRD	9D ROLLING	2251	6454	7397	5784	1624	729	-503	120	120	120	3
▶ AQUA BROOM	▶ 388848	▶ INT	INVOICED	260	133	0	0	1192	0	1860	1516	110	1	
▶ AQUA BROOM	▶ 388848	▶ INT	FORECAST	400	400	400	0	100	100	100	3000	0	0	
▶ AQUA BROOM	▶ 388848	▶ INT	DIFFERENCE	-140	-267	-400	0	1092	-100	1760	-1484	110	1	

# PROCUREMENT PLANNING

## Projected Inventory Levels

Future Balances One Month Reserve

Search line  Search

ItemCode	OCT2024	NOV2024	DEC2024	JAN2025	FEB2025	MAR2025	APR2025	MAY2025	JUN2025	JUL2025	AUG2025	SEP2025
0201417	14179	6711	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967
	10,175,433	9,346,553	8,616,201	8,347,618	7,592,633	6,675,293	6,361,199	6,316,087	5,669,947	5,546,296	5,441,335	5,053,961



Future Balances Three Months Reserve

Search line  Search

ItemCode	OCT2024	NOV2024	DEC2024	JAN2025	FEB2025	MAR2025	APR2025	MAY2025	JUN2025	JUL2025	AUG2025	SEP2025
14229	14229	6963	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018
	10,169,717	9,350,455	8,614,555	8,312,901	7,577,480	7,468,205	7,407,611	7,558,803	6,870,574	6,833,335	6,992,274	6,770,577



Future Balances By Item

Item#	Date	Doc Type	Doc#	Beg Qty	Quantity	End Qty	Beg Value	End Value	Stockout	Replenish
	10/31/24			282	0	282	14229	14229		
	10/31/24	SALES ORDER	293728	318	-36	282	16046	14229		
	11/04/24	SALES FORECAST	FCT	282	-36	246	14229	12413		
	11/11/24	SALES FORECAST	FCT	246	-36	210	12413	10596		
	11/18/24	SALES FORECAST	FCT	210	-36	174	10596	8780		
	11/25/24	SALES FORECAST	FCT	174	-36	138	8780	6963		
	11/30/24			138	0	138	6963	6963		
	12/02/24	SALES FORECAST	FCT	138	-36	102	6963	5146		
	12/09/24	SALES FORECAST	FCT	102	-36	66	5146	3330		

# RUNNING MRP

## Generate the Recommendations

MRP Wizard - HF\_LIVE\_WT

### MRP Results

On the "Report" tab, you may toggle the final inventory quantity either before or after the MRP run with the "Preview MRP Run Results" checkbox.

Planning Horizon 10/01/24 - 10/31/25

Calculated At 9:31PM

Find Item No.

Reprgrt Recommendations

Preview MRP Run Results  Filter Possible Problem Items

#	Item No.	Item Description	Item Lead Time	Historic Data	Past Due Data	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.
1	440000001	Warrior MVR Motor Box w/roll shaft	300			21								
2	440000002	MEDMVR Motor Box Cap Assembly	300			10								
3	440000003	Roll Shaft	300			1								
4	440000004	Roll Cap	300					550						
5	440000005	Grease 1/8" Layer Filter Bag	300			126								
6	440000006	Downs Clean Up Bags	300											
7	440000007	Wheel Mt. J-PR	300											
8	440000008	Roller Assembly	300											
9	440000009	Roller Plate	300											
10	440000010	Sealed Motor Oil	300											
11	440000011	Brake assembly roller axle (1 pack)	300											
12	440000012	Roller 1/8" Layer Filter Bag	300											
13	440000013	Roller Assembly roller axle	300											
14	440000014	Roller Assembly	300											
15	440000015	Roller Cap	300											
16	440000016	Roller Cap Assembly	300											
17	440000017	Roller Cap	300											
18	440000018	Roller Cap	300											
19	440000019	Roller Cap	300											
20	440000020	Roller Cap	300											

### Order Recommendation

Planning Horizon 10/01/24 - 10/31/25

Calculated At 10/25/24 9:31PM

Find Item No.

Create	Order Type	Item Number	Item Description	Quantity	UoM Name	Release Date	Due Date	Vendor Code	Vendor Name	Price	Discount %	Price after Discount	From Whse	To Whse
<input type="checkbox"/>	Purchase Order	440000001	Warrior MVR Motor Box w/roll shaft	21		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000002	MEDMVR Motor Box Cap Assembly	10		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000003	Roll Shaft	1		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input checked="" type="checkbox"/>	Purchase Order	440000004	Roll Cap	550		10/01/24	10/01/24	10000	Zinc Systems, Coos	0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000005	Grease 1/8" Layer Filter Bag	126		10/01/24	10/01/24	10000	Zinc Systems, Coos	0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000006	Downs Clean Up Bags	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000007	Wheel Mt. J-PR	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000008	Roller Assembly	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000009	Roller Plate	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000010	Sealed Motor Oil	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000011	Brake assembly roller axle (1 pack)	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000012	Roller 1/8" Layer Filter Bag	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000013	Roller Assembly roller axle	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000014	Roller Assembly	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000015	Roller Cap	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000016	Roller Cap Assembly	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000017	Roller Cap	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000018	Roller Cap	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000019	Roller Cap	300		10/01/24	10/01/24			0.000	0.000	0.000		WT
<input type="checkbox"/>	Purchase Order	440000020	Roller Cap	300		10/01/24	10/01/24			0.000	0.000	0.000		WT

Vendor Req

Price \$5,897.13

Cases 1,587

Weight 0Lb

Cubes 0.00

# PROCUREMENT PLANNING

## Historical Stockout

Historical Stockouts

TYPE	OCT2024	SEP2024	AUG2024	JUL2024	JUN2024	MAY2024	APR2024	MAR2024	FEB2024	JAN2024	DEC2023	NOV2023	OCT2023	TOTAL
STOCKOUTS	79	83	74	79	44	94	118	419	166	100	59	108	94	1517
WITH PO	55	66	57	63	35	84	91	89	73	41	21	72	75	822
WITHOUT PO	24	17	17	16	9	10	27	330	93	59	38	36	19	695
STOCKOUT DAYS	638	1646	2165	2660	1888	3391	7074	76814	25529	17833	12042	13300	8172	173152

Close

Refresh

Historical StockOut Detail OCT2024

ItemCode	ItemName	StockOutDate	ObjName	ReplenDate	PreBalance	PostBalance	DaysBetween	PO Quantity	DocNum	ShipDate
1	PURELL® Professional HEALTHY SOAP® 0.5% BAK Antimicrobial Foam - 2 / 1200 ML	10/21/24	Delivery	10/22/24	0.000	93.000	1	77.000	57911	09/13/2024
2	MOP - #32 COTTON CUT-END - SCREW TYPE - PACK OF 2 / 12 PACKS PER CASE	10/21/24	Inventory posting	10/24/24	0.000	60.000	3	0.000		
3	16 OZ RIPPLE COFFEE CUP - KRAFT - 20 X 25 / CS	10/01/24	Delivery	10/24/24	0.000	326.000	23	2,053.000	57033	07/20/2024
4	LOBBY DUST PAN W/WHEELS AND ROUND HANDLE (12/CASE)	10/21/24	Delivery	10/24/24	0.000	24.000	3	0.000		
5	PAPER FILTER SHEET (NO HOLE) - 18.125" X 25.375" - 100/CS	10/01/24	Delivery	10/24/24	0.000	2.000	23	0.000		
6	SAFEGUARD HAND SANITIZER GEL - 1.2 LITER - 4 PER CASE	10/18/24	Delivery	10/23/24	0.000	44.000	5	66.000	57778	10/31/2024
7	HARVARD FOAMAWAY - DEFOAMER - 4X1 GALLON CASE	10/07/24	Inventory posting	10/08/24	0.000	6.000	1	4.000	57829	11/19/2024
8	KITCHEN BOUQUET BROWNING SAUCE - 4 X 128OZ	10/08/24	Inventory posting	10/16/24	0.000	108.000	8	108.000	57750	10/28/2024
9	DAWN PROFESSIONAL DISH DETERGENT WITH PUMP - 1 GALLON - 33X4 - 132 PER PALLET (CLUB PACK)	10/17/24	Delivery	10/23/24	0.000	2.000	6	2.000	57778	10/31/2024
10	SANI-BOSS POWDERED LAUNDRY DETERGENT - 35 POUND PAIL - 36 PER PALLET	10/16/24	Delivery	10/23/24	0.000	240.000	7	192.000	57803	11/14/2024
11	PURELL® Advanced Hand Sanitizer Refreshing Gel, Clean Scent, 12/Ct - 12 fl oz Pump Bottle	10/21/24	Delivery	10/25/24	0.000	38.000	4	38.000	57831	11/06/2024
12	CHARMIN PROFESSIONAL 9-90 450 SHEETS PER ROLL - 75 ROLLS PER CASE	10/22/24	Delivery	10/23/24	0.000	10.000	1	50.000	57778	10/31/2024
13	MOP - #32 COTTON CUT-END 1 1/4" BAND - BRICK PACK OF 2 / 18 PACKS PER CASE	10/21/24	Delivery	10/24/24	0.000	1,800.000	3	0.000		
14	WipesPlus Disinfecting Wipe, Flowpack w/ Rigid Lens, 80 Count, 12 Per Case	10/17/24	Delivery	10/21/24	0.000	90.000	4	60.000	57817	10/30/2024
15	WHITE CLAMSHELL BOX 9" X 9" X 3" - 3 CMPT - 2 / 100 CS	10/01/24	Inventory posting	10/25/24	0.000	112.000	24	112.000	57814	11/04/2024
16	HEAVENLY SOFT DOUBLE LAYER SINGLE ROLL TOILET TISSUE 4.0"X3.5" CORE 1.61" 96X500 CASE (30)	10/15/24	Delivery	10/16/24	0.000	150.000	1	481.000	57746	10/21/2024
17	HEAVENLY SOFT DOUBLE LAYER SINGLE ROLL TOILET TISSUE 4.0"X3.5" CORE 1.61" 96X500 CASE (30)	10/18/24	Delivery	10/25/24	0.000	299.000	7	481.000	57746	10/21/2024
18	MOP HANDLE - JANITOR - WOOD 1 1/8" DIA X 60" METAL HEAD STIRRUP & WING NUT (6/CS)	10/17/24	Delivery	10/24/24	0.000	360.000	7	0.000		
19	CELLYSOFT SR, JUMBO TOILET TISSUE - 2-PLY - ROLL LENGTH 1400", CORE 3.3", 6 ROLLS CASE	10/11/24	Delivery	10/16/24	0.000	54.000	5	48.000	57789	11/13/2024
20	WipesPlus Food Contact Sanitizing Wipe, Flowpack w/ Lid, 80 Count, 12 Per Case	10/17/24	Delivery	10/21/24	0.000	120.000	4	0.000		
21	LID - 98MM FLAT W/ STRAW SLOT - FITS 12-24 OZ PET CUP - CLEAR 20/50 PER CASE	10/17/24	Delivery	10/22/24	0.000	500.000	5	8,838.000	57363	08/04/2024
22	NIFTY NABBER TRIGGER GRIP 36" - 1 EACH - 5/CS	10/02/24	Delivery	10/04/24	0.000	50.000	2	0.000		
23	GREEN HERITAGE - 2-PLY JUMBO ROLL BATH TISSUE - 3.4"X560' - 9" DIA. - 12 ROLLS PER CASE	10/01/24	Delivery	10/03/24	0.000	130.000	2	390.000	57834	11/06/2024
24	25 PERSON FIRST AID KIT OSHA COMPLIANT - (12 PER CASE)	10/02/24	Delivery	10/08/24	0.000	72.000	6	60.000	57725	10/07/2024
25	MOP - GREASE BEATER GREEN LARGE BLENDED LOOPED-END 5" BAND (BRICK PACK) (12/CS)	10/08/24	Delivery	10/24/24	0.000	180.000	16	0.000		
26	128 OUNCE (1 GALLON) NATURAL HDPE LT. WT. JUG WITH CAPS - NEPCO 65 GRAMS - 48 PER BAG - 8 PER PALLET	10/02/24	Delivery	10/04/24	0.000	80.000	2	0.000		
27	128 OUNCE (1 GALLON) NATURAL HDPE LT. WT. JUG WITH CAPS - NEPCO 65 GRAMS - 48 PER BAG - 8 PER PALLET	10/17/24	Delivery	10/18/24	0.000	104.000	1	0.000		
28	COIN-VEND - TIDE PROFESSIONAL POWDERED LAUNDRY DETERGENT 5-60 - SINGLE USE BOX - 156 PER CASE	10/02/24	Delivery	10/07/24	0.000	66.000	5	66.000	57811	11/11/2024
29	COIN-VEND - TIDE PROFESSIONAL POWDERED LAUNDRY DETERGENT 5-60 - SINGLE USE BOX - 156 PER CASE	10/22/24	Delivery	10/23/24	0.000	66.000	1	66.000	57811	11/11/2024
30	FLOOR SQUEEGEE - 30" - METAL FRAME (6/CASE)	10/14/24	Delivery	10/24/24	0.000	36.000	10	0.000		
31	GREEN HERITAGE - 2-PLY SINGLE ROLL BATH TISSUE - 500 SHEETS - 4.0"X3.8" - 48 ROLLS PE CASE	10/18/24	Delivery	10/21/24	0.000	330.000	3	330.000	57834	11/06/2024

Close

Refresh

# PROCUREMENT PLANNING

## Future Stockout

Possible Problem Items

ItemCode	OCT2024	NOV2024	DEC2024	JAN2025	FEB2025	MAR2025	APR2025	MAY
1	0	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0
3	0	0	1	0	0	0	0	0
4	0	1	0	0	0	0	0	0
5	1	0	0	0	0	0	0	0
6	0	1	0	0	0	0	0	0
7	1	0	0	0	0	0	0	0
	44	36	21	3		1		

Close

Future Balances

Item#	Date	Doc Type	Doc#	Beg Qty	Quantity	End Qty	Beg Value	End Value	Stockout	Replenish
	10/21/24	PURCHASE ORDER	57795	204	224	428	4284	8988		
	10/28/24	SALES FORECAST	FCT	428	-36	392	8988	8232		
	10/30/24	SALES ORDER	293710	392	-16	376	8232	7896		
	10/31/24			368	0	368	7728	7728		
	10/31/24	SALES ORDER	293728	376	-8	368	7896	7728		
	11/04/24	SALES FORECAST	FCT	368	-60	308	7728	6468		
	11/11/24	SALES FORECAST	FCT	308	-60	248	6468	5208		
	11/18/24	SALES FORECAST	FCT	248	-60	188	5208	3948		
	11/25/24	SALES FORECAST	FCT	188	-60	128	3948	2688		
	11/30/24			128	0	128	2688	2688		
	12/02/24	SALES FORECAST	FCT	128	-60	68	2688	1428		
	12/09/24	SALES FORECAST	FCT	68	-60	8	1428	168		
	12/16/24	SALES FORECAST	FCT	8	-60	-52	168	0	SO	
	12/23/24	SALES FORECAST	FCT	-52	-60	-112	0	0	SO	
	12/26/24	PURCHASE ORDER	REC	-112	280	168	0	3528		REPL
	12/30/24	SALES FORECAST	FCT	168	-60	108	3528	2268		
	12/31/24			108	0	108	2268	2268		
	01/02/25	PURCHASE ORDER	REC	108	56	164	2268	3444		
	01/06/25	SALES FORECAST	FCT	164	-60	104	3444	2184		
	01/09/25	PURCHASE ORDER	REC	104	56	160	2184	3360		
	01/13/25	SALES FORECAST	FCT	160	-60	100	3360	2100		
	01/16/25	PURCHASE ORDER	REC	100	56	156	2100	3276		
	01/20/25	SALES FORECAST	FCT	156	-60	96	3276	2016		
	01/23/25	PURCHASE ORDER	REC	96	56	152	2016	3192		
	01/27/25	SALES FORECAST	FCT	152	-60	92	3192	1932		
	01/30/25	PURCHASE ORDER	REC	92	56	148	1932	3108		
	01/31/25			148	0	148	3108	3108		
	02/03/25	SALES FORECAST	FCT	148	-60	88	3108	1848		
	02/06/25	PURCHASE ORDER	REC	88	56	144	1848	3024		



# MRP

Procurement is where  
Organizational Strategy  
meets Execution



 Presentation



 Contact Info