

MULTI-ECHELON INVENTORY OPTIMIZATION

MEIO

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Blue Ridge



BLUEPRINT 2019
PLANNING FOR A FLEXIBLE FUTURE

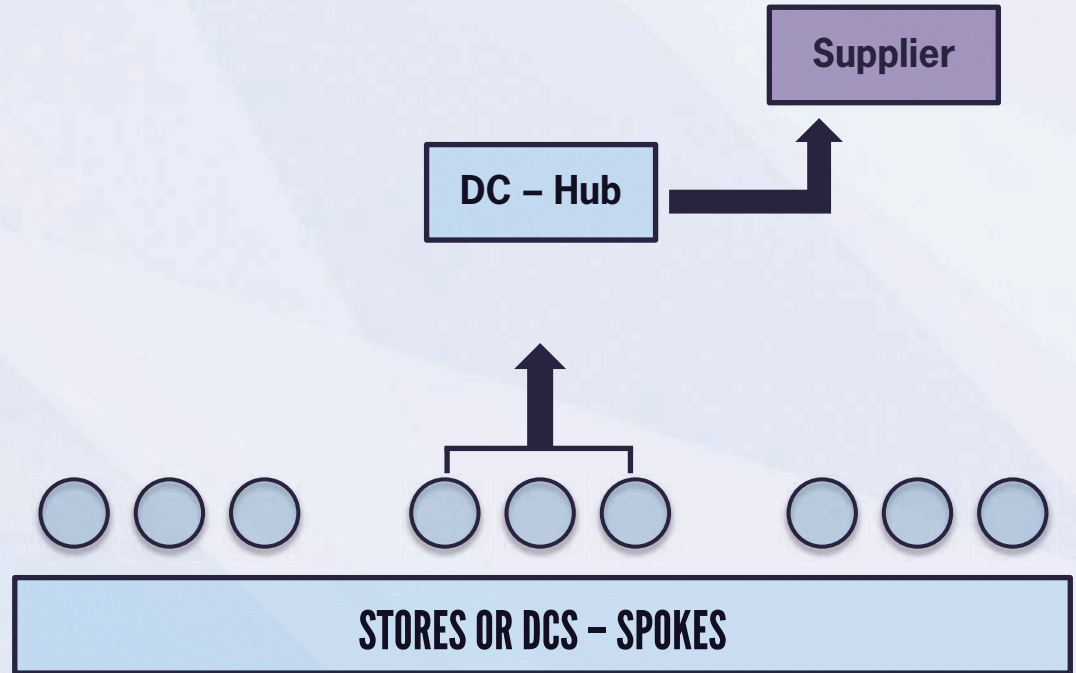
WHAT IS MEIO?

A solution that manages the demand signals for a supply chain that has multiple levels:

- Retail stores
- Multi-tier distribution
- Supplier collaboration
- Production items
- Kits and components

MEIO IN A MULTI-ECHELON ENVIRONMENT

- **Lower Echelons** order from an upper echelon
- **Upper Echelon** orders from supplier using the projected orders from the lower echelon



MEIO | FORECAST TYPES

- Stochastic
 - Tries to predict how consumers will react to an item. Statistical forecast method estimates averages and patterns.
 - In stores, the demand is stochastic due to the fickle nature of the consumer and our inability to predict when/why/how much they will buy.
- Deterministic
 - PREDICTABLE method for forecasting future lower echelon orders. Demand is more certain, or not heavily influenced by chance. Deterministic forecast method shows actual forthcoming demand.

MEIO | DEMAND TYPES

- Independent Demand
 - For example, consumer-level demand on the item. This is the demand that a “stochastic” forecast attempts to predict.
- Dependent Demand
 - Demand placed on a higher supply chain tier (for example, a DC) to support the replenishment needs of a lower tier...(for example, stores).

MEIO | WHAT ARE THE BENEFITS?

1. MEIO orders at the upper echelon support projected orders at the lower echelon. Projected orders are based on the actual SOQ considering buying constraints (such as pack size and bracket building), hold-outs, MOQ's, reserves, events, etc.
2. MEIO is designed to:
 - Eliminate redundant safety stock *
 - Achieve customer service goals
 - And do this on most profitable investment

*Safety Stock for lower echelon is calculated daily and is part of the demand signal sent to the upper echelon as Dependent Demand resulting in less safety stock at the upper echelon.

MEIO | HOW DOES IT WORK?

HOW
DOES IT
WORK

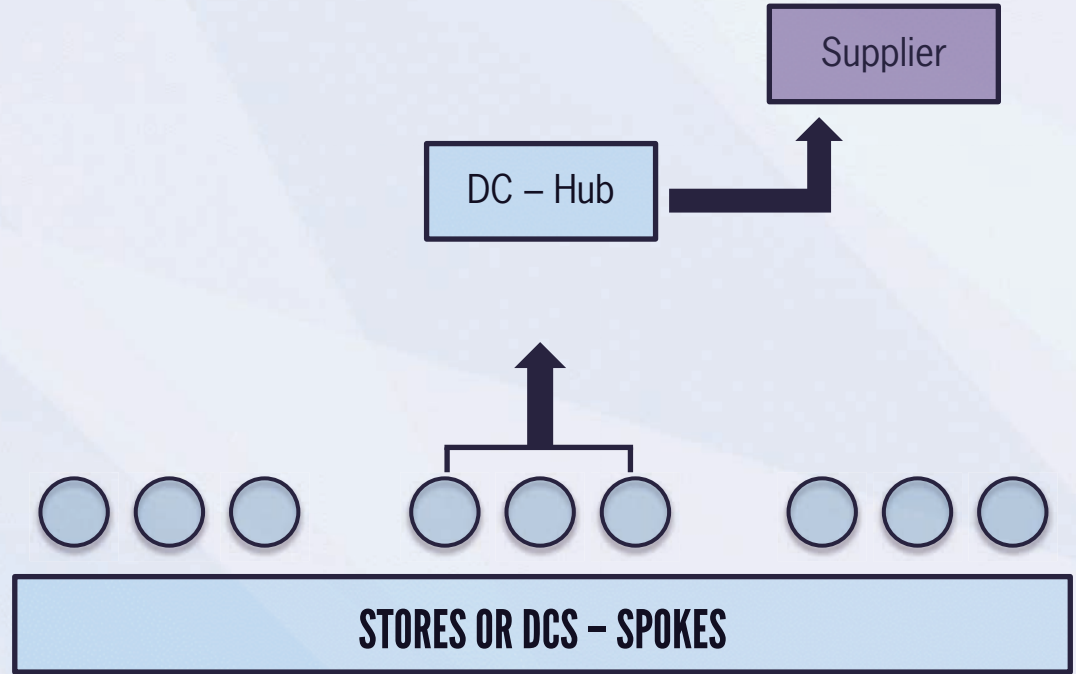


MEIO IN A MULTI-ECHELON ENVIRONMENT

Projections

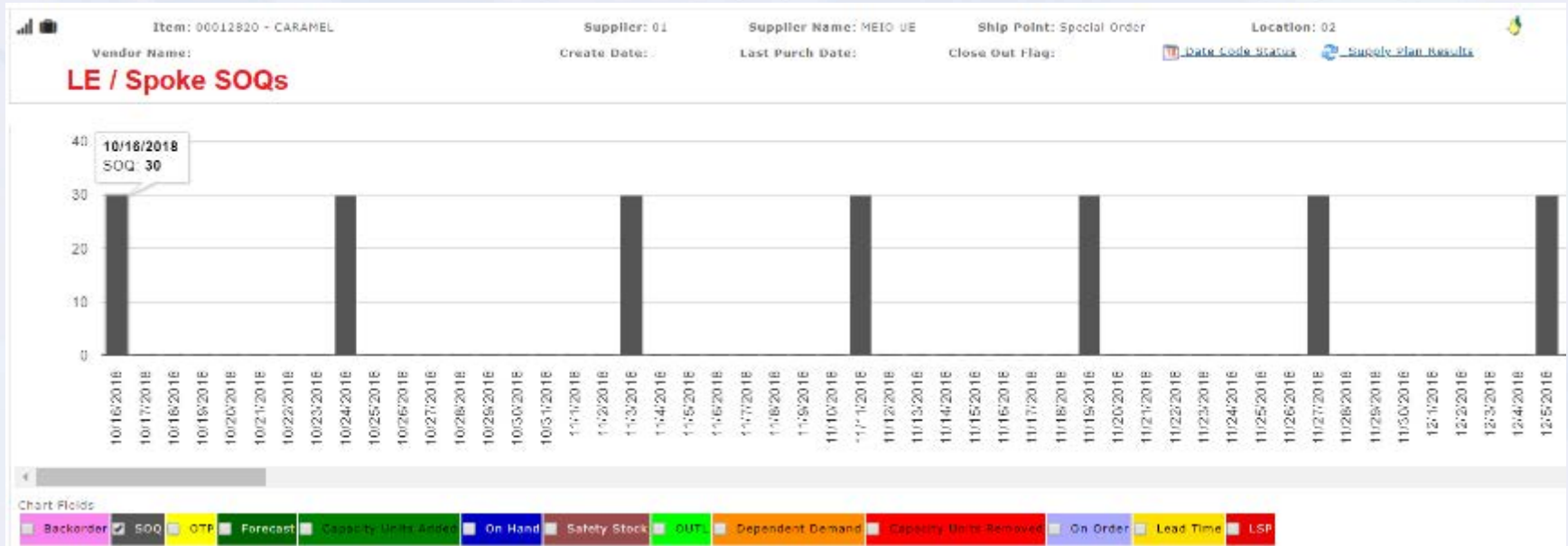
Calculated for every item,
everyday for all levels.

LE SOQs are UE Dependent
Demand Signals.



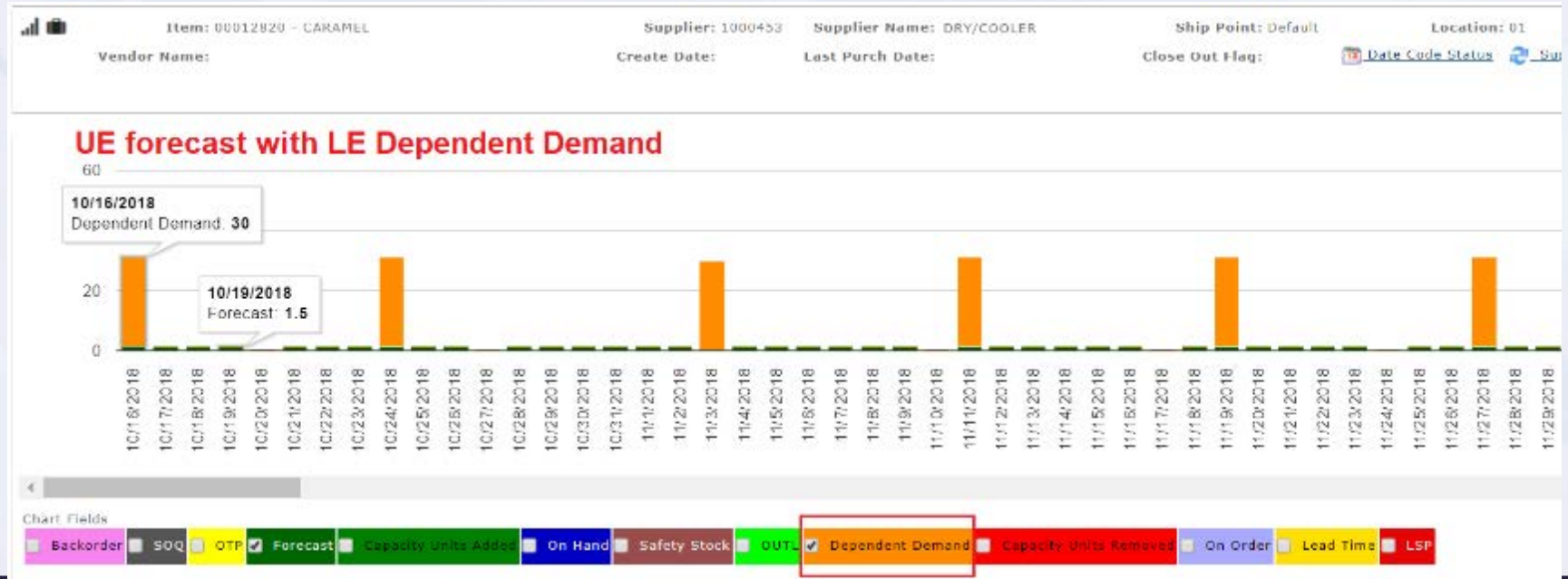
MEIO | DAILY ITEM ORDER PROJECTIONS

Lower Echelon SOQs drive Upper Echelon Dependent Demand Signals



MEIO | DAILY ITEM ORDER PROJECTIONS

Upper Echelon sees Lower Echelon SOQs as Dependent Demand Signals



MEIO – UE ORDER ITEM DETAIL

Upper Echelon with Dependent Demand

Item: OCG302 - Olivia's Cl Gal 2 oz Supplier: OLISOL Supplier Name: Olivia's Solutions Inc Ship Point: Default Location: 016
 PDT Code: On Hand: 0.0000 On Order: 0.0000 Lead Time: 5 [Data Code Status](#) [Supply Plan Results](#)

Constrained Allocation Result

Units	Cal Days	Sell Days	
72.0	180.0	120.0	50Q
0.0	0.0	0.0	Capacity
0.0	0.0	0.0	Maximum Qty (0.0)
0.0	0.0	0.0	Precision
0.0	0.0	0.0	Warehouse Multiple (0.0)
12.0	54.9	38.9	Buying Multiple (24.0)
0.0	0.0	0.0	Minimum Qty (24.0)
0.0	0.0	0.0	Days Adjusted (0)
0.0	0.0	0.0	Special Orders
0.0	0.0	0.0	Event (0.0)
0.0	0.0	0.0	Fwd Buy (0.0)
60.0	125.1	89.1	Need
0.0	0.0	0.0	Balance

Order Detail Hide



Item Details

- 0.00 4 Weekly Forecast
- None Seasonal 4 Weekly Forecast
- 85.00 Service Level Goal
- \$5.78 Selling Unit Cost
- 5.78 Alternate Cost
- \$5.78 Effective Cost**
- 60.0 Dependent Demand**
- Recent Demand History

 - 0.00 Demand WTD
 - 0.00 2/17/2019
 - 0.00 2/10/2019
 - 0.00 2/3/2019
 - 0.00 1/27/2019

MEIO – UE VIEW OF DEPENDENT DEMAND

Link to Dependent Demand

Item Details
0.00 4 Weekly Forecast
None Seasonal 4 Weekly Forecast
85.00 Service Level Goal
\$5.78 Selling Unit Cost
5.78 Alternate Cost
\$5.78 Effective Cost
60.0 Dependent Demand
Recent Demand History  
0.00 Demand WTD
0.00 2/17/2019
0.00 2/10/2019
0.00 2/3/2019
0.00 1/27/2019



These 3 locations are dependent on location 016 for supply

Item ID	Description	Location	SQQ	Projected Dependent Demand
OCG302	Olivia's Cl Gel 2 oz	011	58	58
OCG302	Olivia's Cl Gel 2 oz	013	0	0
OCG302	Olivia's Cl Gel 2 oz	014	0	2

MEIO – UE VIEW OF DEPENDENT DEMAND

Link to Dependent Demand

Item Details

0.00 4 Weekly Forecast
 None Seasonal 4 Weekly Forecast
 85.00 Service Level Goal
 \$5.78 Selling Unit Cost
 5.78 Alternate Cost
 \$5.78 Effective Cost
60.0 Dependent Demand
 Recent Demand History  

0.00 Demand WTD
 0.00 2/17/2019
 0.00 2/10/2019
 0.00 2/3/2019
 0.00 1/27/2019

These 3 locations are dependent on location 016 for supply

Item ID	Description	Location	SQQ	Projected Dependent Demand
OCG302	Olivia's Cl Gel 2 oz	011	58	58
OCG302	Olivia's Cl Gel 2 oz	013	0	0
OCG302	Olivia's Cl Gel 2 oz	014	0	2

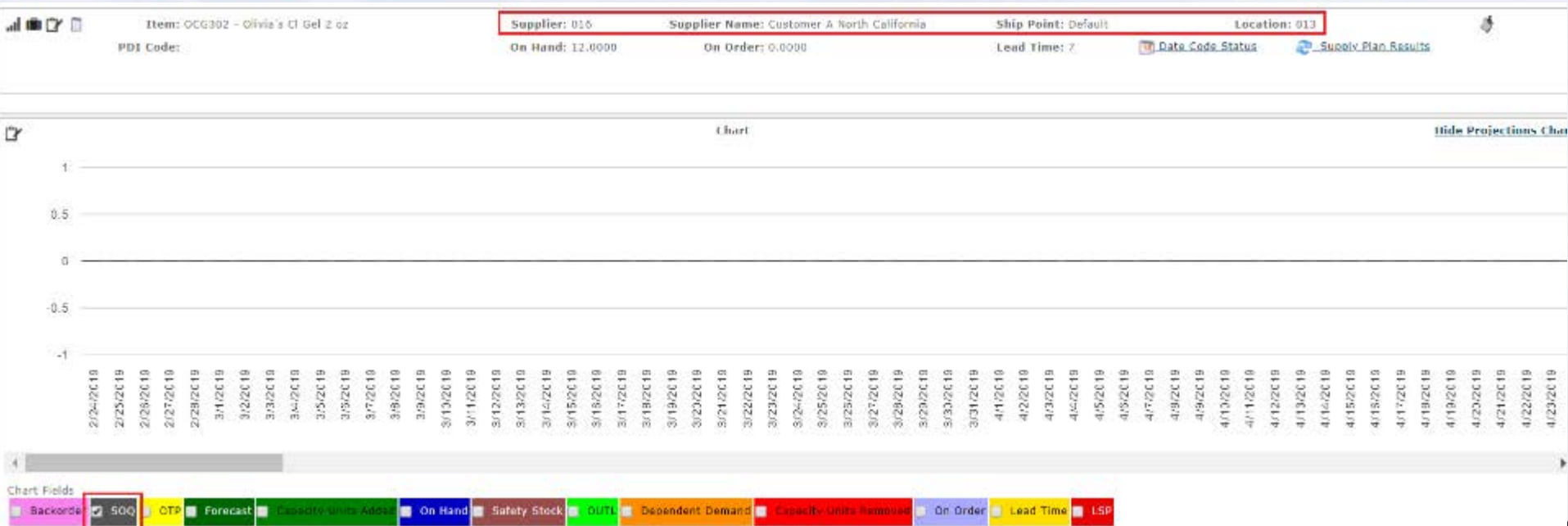
MEIO – LOWER ECHELON SOQ PROJECTIONS

Lower Echelon 011 SOQs



MEIO – LOWER ECHELON SOQ PROJECTIONS

Lower Echelon 013 – No projected SOQs



MEIO – LOWER ECHELON SOQ PROJECTIONS

Lower Echelon 014 SOQs

Item: OCG302 - Olivia's Cl Gel 2 oz

PDI Code:

Supplier: 010 Supplier Name: Customer A North California Ship Point: Default Location: 014

On Hand: 0.0000 On Order: 0.0000 Lead Time: 7 [Data Code Status](#) [Supply Plan Results](#)

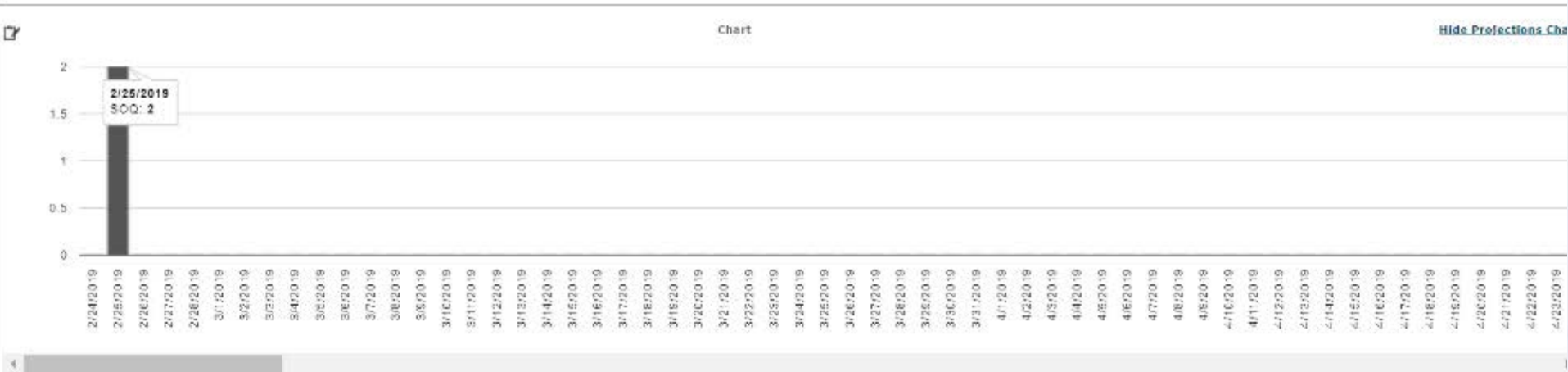
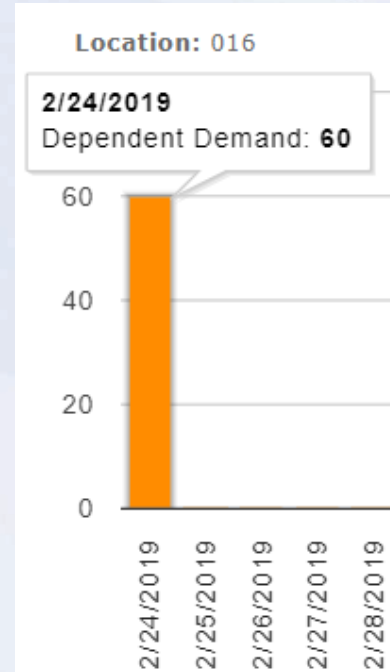
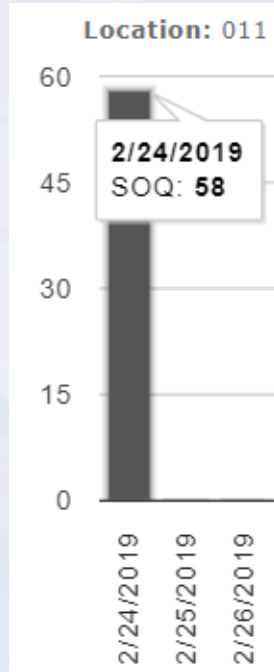
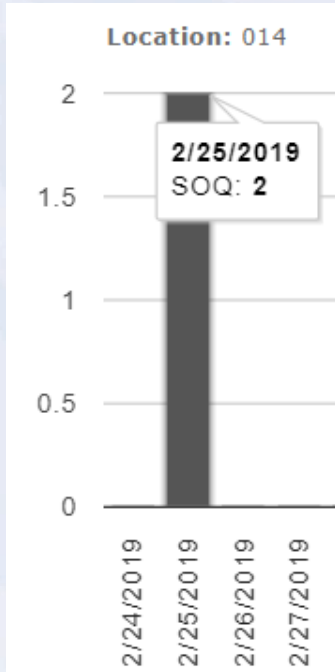


Chart Fields

Backorder
 SOQ
 OTP
 Forecast
 Capacity Limits Added
 On Hand
 Safety Stock
 OUTL
 Dependent Demand
 Capacity Units Removed
 On Order
 Lead Time
 LSP

MEIO – LOC 011 SOQ, LOC 016 DD PROJECTION



MEIO – UPPER ECHELON DEPENDENT DEMAND PROJECTIONS

Loc 016 Upper Echelon - combined Lower Echelon Dependent Demand

Item: OC6302 - Olivia's Cl Gel 2 oz
Supplier: OLISOL
Supplier Name: Olivia's Solutions Inc
Ship Point: Default
Location: 016

PDI Code:
On Hand: 0.0000
On Order: 0.0000
Lead Time: 5
[Data Code Status](#)
[Supply Plan Results](#)

[Constrained Allocation Result](#)



HOW DOES DEPENDENT DEMAND IMPACT TODAY'S ORDER?



DEPENDENT DEMAND & OUTL?

Item: OC6302 - Olivia's Cl Gel 2 oz
PDI Code:

Supplier: OLISOL Supplier Name: Olivia's Solutions Inc Ship Point: Default Location: 01G
On Hand: 0.0000 On Order: 0.0000 Lead Time: 5 [Data Code Status](#) [Supply Plan Results](#)

[Constrained Allocation Result](#)

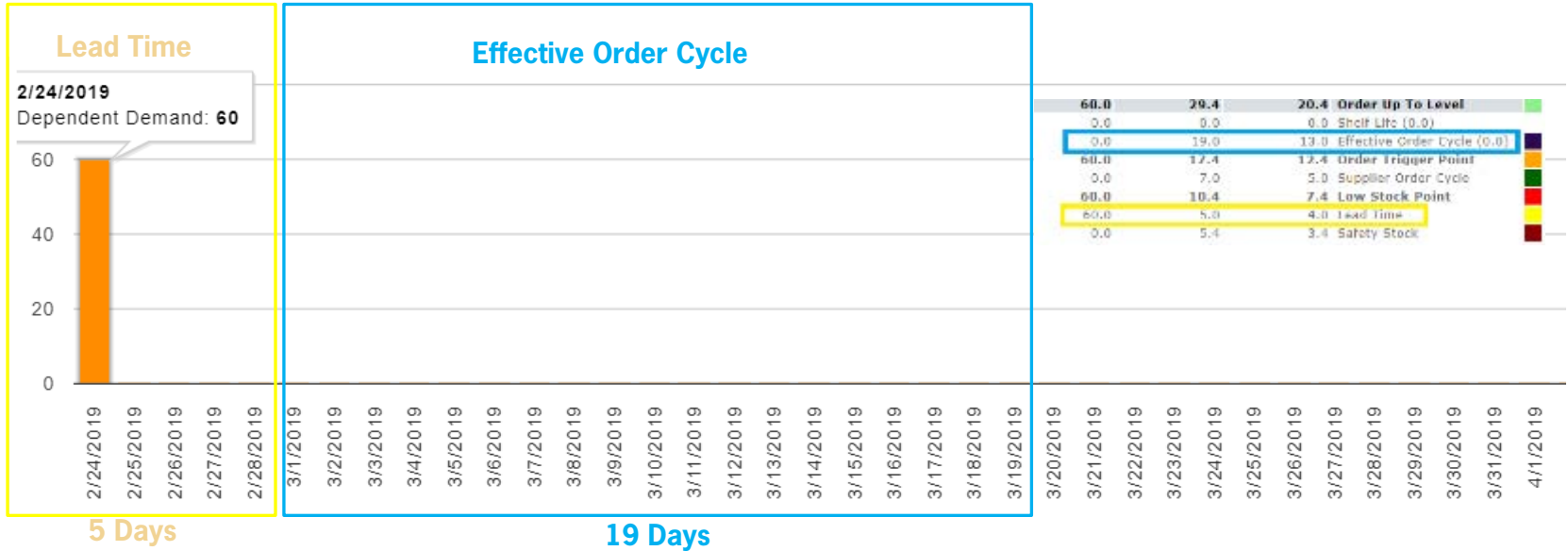


MEIO – UPPER ECHELON OUTL

Dependent Demand is spread through the UE Lead Time and Effective Order Cycle

Units	Cal Days	Sell Days	
72.0	180.0	128.0	SOQ
0.0	0.0	0.0	Capacity
0.0	0.0	0.0	Maximum Qty (0.0)
0.0	0.0	0.0	Precision
0.0	0.0	0.0	Warehouse Multiple (0.0)
12.0	54.9	38.9	Buying Multiple (24.0)
0.0	0.0	0.0	Minimum Qty (24.0)
0.0	0.0	0.0	Days Adjusted (0)
0.0	0.0	0.0	Special Orders
0.0	0.0	0.0	Event (0.0)
0.0	0.0	0.0	Fwd Buy (0.0)
60.0	125.1	89.1	Need
0.0	0.0	0.0	Balance
0.0	N/A	N/A	On Hand
0.0	N/A	N/A	On Order
0.0	N/A	N/A	Backorder
0.0	N/A	N/A	Reserved
0.0	N/A	N/A	Held Qty (0.0)
60.0	29.4	20.4	Order Up To Level
0.0	0.0	0.0	Shelf Life (0.0)
0.0	19.0	13.0	Effective Order Cycle (0.0)
60.0	17.4	12.4	Order Trigger Point
0.0	7.0	5.0	Supplier Order Cycle
60.0	10.4	7.4	Low Stock Point
60.0	5.0	4.0	Lead Time
0.0	5.4	3.4	Safety Stock

MEIO – UPPER ECHELON DD THROUGH LEAD TIME AND EOC



MEIO – UPPER ECHELON DD THROUGH LEAD TIME AND EOC

4/24 DD is not in today's order, it's beyond the LT + EOC days

Item: OC6302 - Olivia's Cl Gel 2 oz Supplier: OLISOL Supplier Name: Olivia's Solutions Inc Ship Point: Default Location: 01G
PDI Code: On Hand: 0.0000 On Order: 0.0000 Lead Time: 5 [Data Code Status](#) [Supply Plan Results](#)
[Constrained Allocation Result](#)



ORDER SUMMARY - UPPER ECHELON & LOWER ECHELON



MEIO – UPPER ECHELON ORDER SUMMARY

Order Item Alerts

- Constrained Supply
- Dependent Demand

Supplier: GLENN - Global Solutions Inc		Skip Point: 00000	Location: 036	Scheduled Date: None	Last Approval Date: 10/25/20					
Order Totals										
Order Amount	Fixed	Adjusted	Fixed	Weight	Volume					
Carrency:	2347	2410	2410	000	000					
Units:	00	00	00	00	No Fractions Ratio					
Weight:	20	20	20	Minimum:						
Net Weight:	0	0	0	Maximum:						
Cube:	1,440	1,720	1,720	Unit of Measure:						
Cases:	0	0	0	Build Type:						
Layers:	00	00	00	Discount Type:						
Pallets:	0	0	0	Minimum:						
Cube Adjusted Weight:	0	0	0							
Boxes:	00	00	00							
	00	00	00							
Order Parameters										
Days Delay:	Supplier Order Cycle:	Lead Time:	Days Added:	Build To Stock						
5	7	5	0							
Order Items										
Item	Qty	Description	Unit	Alert	Alert	Alert	Alert	Alert	Alert	Alert
(14) 411000	(00)	411000	(00)	00	00	00	00	00	00	00
(11) 411000	(00)	411000	(00)	00	00	00	00	00	00	00
(00) 00	(00)	411000	(00)	00	00	00	00	00	00	00
(00) 00	(00)	411000	(00)	00	00	00	00	00	00	00
(00) 00	(00)	411000	(00)	00	00	00	00	00	00	00
(15) 411000	(00)	411000	(00)	00	00	00	00	00	00	00
(14) 411000	(00)	411000	(00)	00	00	00	00	00	00	00
(14) 411000	(00)	411000	(00)	00	00	00	00	00	00	00

MEIO – UPPER ECHELON ORDER ITEM DETAIL

Constrained Supply Alert, Constrained Allocation Result

Item: HCMH132 - HILUX CMH 315W 4200K BU/T12 Supplier: USHAME Supplier Name: Ushio America, Inc Ship Po

PDI Code: On Hand: 0.0000 On Order: 0.0000 Lead Ti

Constrained Allocation Result

Units	Cal Days	Sell Days	
24.0	87.1	63.1	SOQ
0.0	0.0	0.0	Capacity
0.0	0.0	0.0	Maximum Qty (0.0)
0.0	0.0	0.0	Precision
0.0	0.0	0.0	Warehouse Multiple (0.0)
8.0	31.0	23.0	Buying Multiple (12.0)
0.0	0.0	0.0	Minimum Qty (12.0)
0.0	0.0	0.0	Days Adjusted (0)
0.0	0.0	0.0	Special Orders
0.0	0.0	0.0	Event (0.0)
0.0	0.0	0.0	Fwd Buy (0.0)
16.0	56.1	40.1	Need
0.0	0.0	0.0	Balance
0.0	0.0	0.0	On Hand
0.0	0.0	0.0	On Order

Constrained Allocation Result: [Close](#)

Item Name : HCMH132 - HILUX CMH 315W 4200K BU/T12
 Available Supply : 0
 Allocated Units: 13

Location	Location Type	Original Need	Allocated Units	Deficit	Allocation Date
011	Dependent SOQ	13	0	13	24-Feb-2019
013	Dependent SOQ	0	0	0	24-Feb-2019
014	Dependent SOQ	3	0	3	24-Feb-2019
016	Independent Forecast	0	0	0	24-Feb-2019

50 Items per page 1 - 4 of 4 items

MEIO – CONSTRAINED ALLOCATION

Constrained Allocation

Demand Priorities

<input type="text" value="4.00"/>	Dependent Safety Stock
<input type="text" value="6.00"/>	Dependent Event
<input type="text" value="2.00"/>	Dependent Turn Order
<input type="text" value="3.00"/>	Independent Safety Stock
<input type="text" value="5.00"/>	Independent Event
<input type="text" value="1.00"/>	Independent Turn Order

Allocations

<input type="text" value="1.00"/> Allocation Priority	<input type="text" value="Item"/> ▼ Value From
<input type="checkbox"/> Exclude From Constrained Processing	<input type="text" value="Item"/> ▼ Value From

MEIO – LOWER ECHELON ORDER SUMMARY

Order Item Alerts

- Constrained SOQ
- Kits

Supplier: 011 Customer: A Indiana Ship Point: Default Location: 012 Scheduled Date: 2/20/2019 Lead Approval Date: None

Show Order Summary Show Order Options

Order Totals:	Order Amount	Need	Adjusted	Final	Bracket	Parameters
	Currency:	\$152,275	\$152,275	\$21,914	ID:	1 Y
	Units:	25,310	25,310	25,186	Minimum:	0 Cr L
	Weight:	115,667	115,667	17,010	Maximum:	20 Or 60,100
	Net Weight:	0	0	0	Unit of Measure:	Units to Weigh
	Cube:	2,225,206	2,225,206	2,309	Build Type:	Never Minimum
	Cube:	6,272	6,272	1,442	Different Type:	Percent Off
	Layers:	25,310	25,310	25,186	Discount:	0
	Pallets:	111	111	0		
	Cube Adjusted Weight:	0	0	0		
	Dozens:	35,310	35,310	25,186		
	:	25,310	25,310	25,186		

Order Parameters

Days Delay: 20 Supplier Order Cycle: 4 Lead Time: 7 Days Added: 0 Build To Days

Order Items

Task	Msg												
(2119)	ALASMA	(0)	Active	(0)	Days	(0)	Holder Calendar	(0)	New Seasonal Profile	(0)	Supply Plan	(1350)	Variable Demand
(209)	SOQ Issues	(0)	74 Mixed Service	(12)	Excess Inv	(0)	Inventory Check	(129)	Excess Stock	(0)	Price Excesses	(5)	Transfer
(128)	A Top Stock Item	(0)	Reorder	(132)	Excess Inv	(1115)	Kit	(0)	Not Scheduled	(0)	Promotion	(138)	Unit Item
(690)	Kit Stock Item	(34)	Constrained SOQ	(0)	Excess Demand	(39)	Kit Stock	(0)	On Hold	(0)	RTB Simulations	(24)	Unit Kit
		(0)	Constrained SOQ	(0)	Event Buy	(0)	Mixed Service	(64)	Kit Stock	(0)	Subseq Conflicts	(0)	Unauthorized
		(0)	Dozen Kit	(0)	Prod Bar	(32)	Kit	(0)	Kit Stock Excess	(3)	Kit Kit	(0)	Uncovering Deal
(207)	active	(207)	active / words	(0)	Manual	(740)	Kit Stock	(0)	Kit Stock	(0)	Kit Stock	(0)	Kit Stock

MEIO – LOWER ECHELON ORDER SUMMARY

Order Item Alerts

- Constrained SOQ, zero or portion of needed SOQ

This item has an SOQ that has been constrained due to allocation.

Item: HCMH132 - HiLUX CMH 315W 4200K BU/T12
Supplier: 016
Supplier Name: Customer A North California
Ship Point: Default
Location: 014

PDI Code:
On Hand: 0.0000
On Order: 0.0000
Lead Time: 7
Date Code Status
Supply Pl

Units	Cal Days	Sell Days	
0.0	0.0	0.0	SOQ
0.0	0.0	0.0	Capacity
0.0	0.0	0.0	Maximum Qty (0.0)
0.0	0.0	0.0	Precision
0.0	0.0	0.0	Warehouse Multiple (0.0)
0.0	0.0	0.0	Buying Multiple (1.0)
0.0	0.0	0.0	Minimum Qty (1.0)
0.0	0.0	0.0	Days Adjusted (0)
0.0	0.0	0.0	Special Orders
0.0	0.0	0.0	Event (0.0)
0.0	0.0	0.0	Fwd Buy (0.0)
3.0	78.5	55.5	Need



Item Details

- 1.06 4 Weekly Forecast
- None Seasonal 4 Weekly Forecast
- 99.00 Service Level Goal
- \$36.95 Selling Unit Cost
- 36.95 Alternate Cost
- \$36.95 Effective Cost
- 0.0 Dependent Demand

Recent Demand History

- 0.00 Demand WTD
- 0.00 2/17/2019
- 0.00 2/10/2019
- 0.00 2/3/2019

MEIO – LOWER ECHELON ORDER SUMMARY

Order Item Alerts

- Kits – Identifies the Lower Echelon items. Supplier ID will be the location the items are supplied from.

Supplier: 016

Supplier Name: Customer A North California

Ship Point: Default

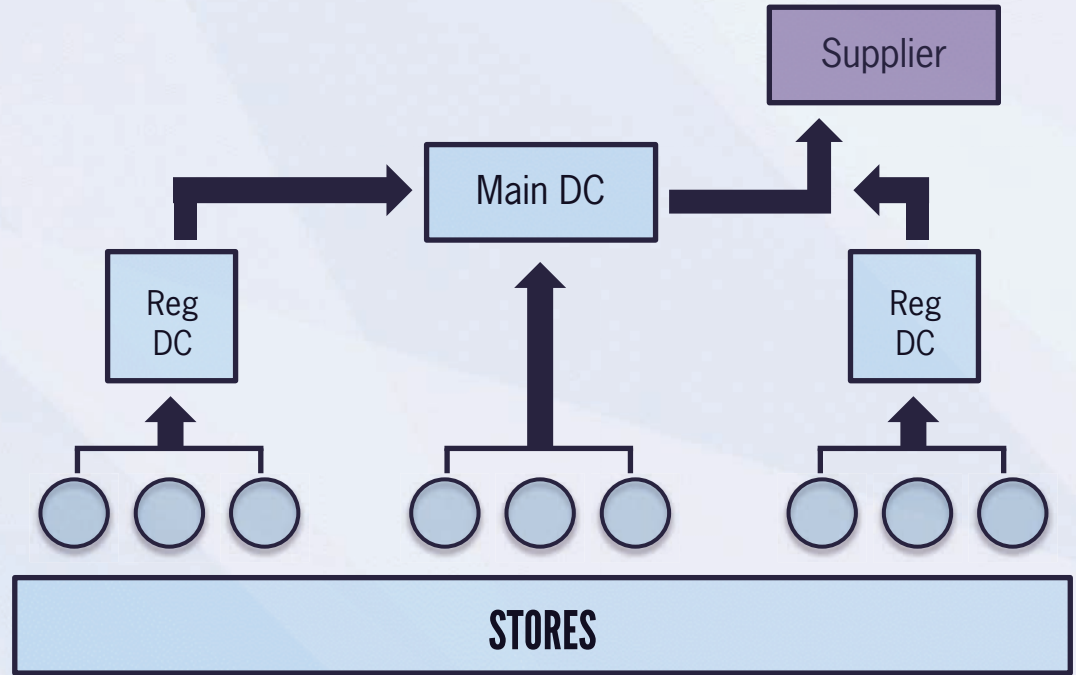
Location: 014

MORE THAN 2 TIERS OF DISTRIBUTION?



MEIO IN A MULTI-ECHELON ENVIRONMENT

- **Lower Echelons** order from an upper echelon
- **Upper Echelon** order from suppliers (or other upper echelons) using the projected orders from the lower echelon



MEIO – MULTIPLE TIERS

Loc 016 – UE purchase from Supplier

Loc 014 – LE supplied form Loc 016

Loc 013 – LE supplied from Loc 016

Loc 012 – LE supplied from Loc 011

Loc 011 – LE supplied from Loc 016 & UE for Loc 009 & 010

Loc 010 – LE supplied from 011

Loc 009 – LE supplied from 011

> [Item List](#)

Y List Filtered By: Item ID: OCG302;

	Item ID	Description	Supplier ID	Ship Point	Location ▼	Activity Code	SOQ	Buying Multiple (Units)	LT (Days)	Units On Hand	Units On Order
	OCG302	Olivia's Cl Gel 2 oz	OLISOL	Default	016	A - Active	72.00	24	5	0.00	0.00
	OCG302	Olivia's Cl Gel 2 oz	016	Default	014	A - Active	0.00	1	7	0.00	0.00
	OCG302	Olivia's Cl Gel 2 oz	016	Default	013	A - Active	0.00	1	7	12.00	0.00
	OCG302	Olivia's Cl Gel 2 oz	011	Default	012	A - Active	0.00	1	7	0.00	0.00
	OCG302	Olivia's Cl Gel 2 oz	016	Default	011	A - Active	58.00	1	7	0.00	0.00
	OCG302	Olivia's Cl Gel 2 oz	011	Default	010	A - Active	0.00	1	7	0.00	0.00
	OCG302	Olivia's Cl Gel 2 oz	011	Default	009	A - Active	7.00	1	7	0.00	0.00

MEIO – INDEPENDENT AND DEPENDENT DEMAND

DD is visual only. It's not included in the forecast, deviation or trend at the UE.



MEIO – INDEPENDENT AND DEPENDENT DEMAND & FORECAST

DD can be viewed in the Charts and History Edit box

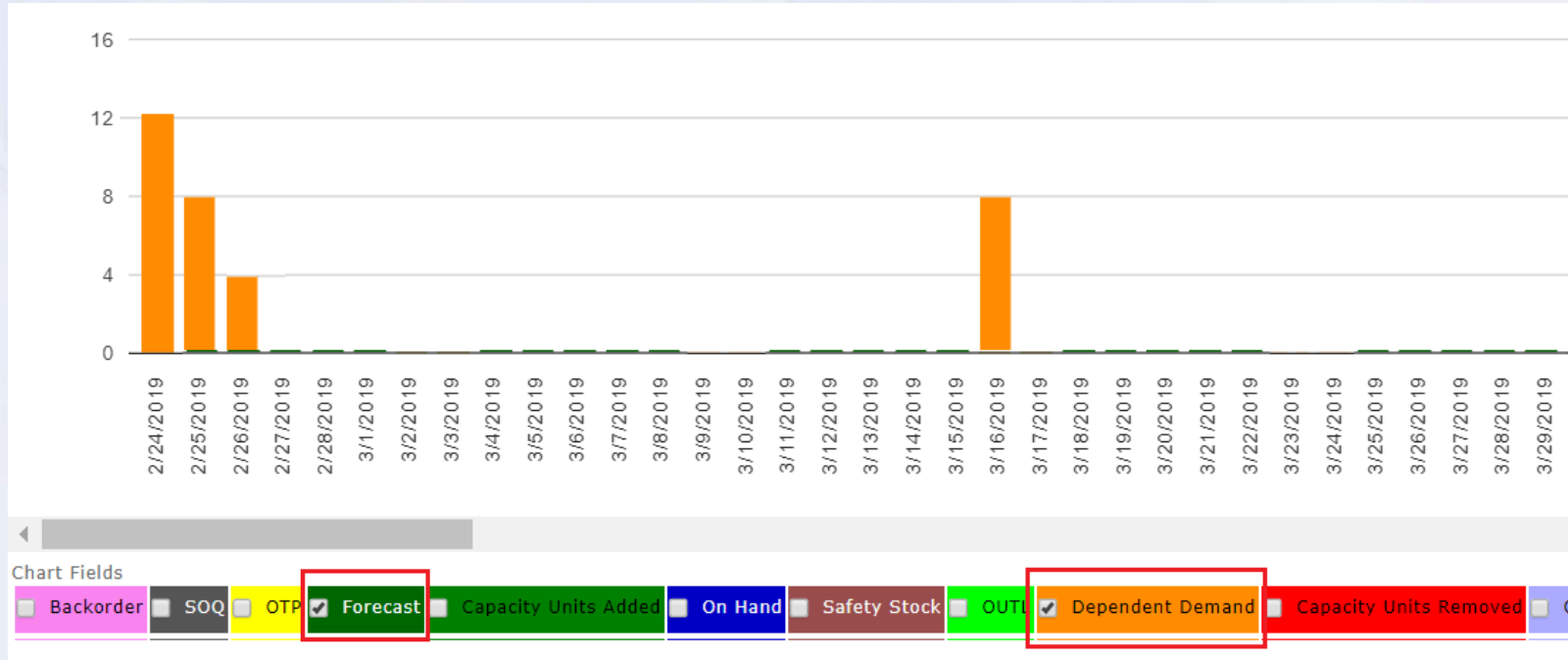
Weekly History Edit				
	6/10/2018	6/17/2018	6/24/2018	7/1/2018
Sales:	4.0000	25.0000	9.0000	0.0000
Lost Sales:	0.0000	2.9689	7.4222	7.4222
Promotion:	0.0000	0.0000	0.0000	0.0000
Dependent:	0.0000	24.0000	0.0000	0.0000
Lost Dependent:	0.0000	0.0000	0.0000	0.0000

Update Cancel

Hide Charts 4 Weekly



MEIO – DAILY PROJECTIONS, FORECAST + DEPENDENT DEMAND



MEIO – PROJECTIONS GRID

Date	Item Number	Order Id	On Hand	On Order	OUTL	Economic Order Cycle	OTF	Vendor Order Cycle	LSP	SS	LT	SOQ	Backorder	Receipt Quantity	Forecast	In Hold	On Reserve	Balance	Delay Days	Dependent Demand Units
2/24/2019	OCG302	299438	0	0	58	0	44.15916054	0	41.08330264	14.00744464	27.07585794	58	0	0	12	0	0	0	0	12
2/25/2019	OCG302	299438	0	58	46	0	31.98402300	0	28.90816504	13.83230704	15.07585794	0	0	0	8.615171594	0	0	58	10	8
2/26/2019	OCG302	299438	0	58	46	0	31.98402300	0	28.90816504	13.83230704	15.07585794	0	0	0	4.615171594	0	0	58	9	4
2/27/2019	OCG302	299438	0	58	46	0	31.98402300	0	28.90816504	13.83230704	15.07585794	0	0	0	0.615171594	0	0	58	8	0
2/28/2019	OCG302	299438	0	58	46	0	31.98402300	0	28.90816504	13.83230704	15.07585794	0	0	0	0.615171594	0	0	58	7	0
3/1/2019	OCG302	299438	0	58	46	0	31.98402300	0	28.90816504	13.83230704	15.07585794	0	0	0	0.615171594	0	0	58	6	0
3/2/2019	OCG302	299438	0	58	46	0	31.98402300	0	28.90816504	13.83230704	15.07585794	0	0	0	0	0	0	58	5	0
3/3/2019	OCG302	299438	58	0	46	0	31.98402300	0	28.90816504	13.83230704	15.07585794	0	58	0	0	0	0	58	4	0
3/4/2019	OCG302	299438	58	0	46	0	31.98402300	0	28.90816504	13.83230704	15.07585794	0	0	0	0.615171594	0	0	58	3	0
3/5/2019	OCG302	299438	57.38482840	0	46	0	31.98402300	0	28.90816504	13.83230704	15.07585794	0	0	0	0.615171594	0	0	57.38482840	2	0
3/6/2019	OCG302	299438	56.76965681	0	46	0	31.98402300	0	28.90816504	13.83230704	15.07585794	0	0	0	0.615171594	0	0	56.76965681	1	0
3/7/2019	OCG302	299438	56.15448522	0	34	0	28.33267064	0	17.25681274	14.18095474	3.07585796	0	0	0	0.615171594	0	0	56.15448522	3	0
3/8/2019	OCG302	299438	55.53931361	0	34	0	28.33267064	0	17.25681274	14.18095474	3.07585796	0	0	0	0.615171594	0	0	55.53931361	2	0
3/9/2019	OCG302	299438	54.92414201	0	34	0	28.33267064	0	17.25681274	14.18095474	3.07585796	0	0	0	0	0	0	54.92414201	1	0
3/10/2019	OCG302	299438	54.92414201	0	26	0	20.15916054	0	17.08330264	14.00744464	3.07585796	0	0	0	0	0	0	54.92414201	0	0
3/11/2019	OCG302	299438	54.92414201	0	26	0	19.98402300	0	16.90816504	13.83230704	3.07585796	0	0	0	0.615171594	0	0	54.92414201	0	0
3/12/2019	OCG302	299438	54.30897044	0	26	0	19.98402300	0	16.90816504	13.83230704	3.07585796	0	0	0	0.615171594	0	0	54.30897044	8	0
3/13/2019	OCG302	299438	53.69379885	0	26	0	19.98402300	0	16.90816504	13.83230704	3.07585796	0	0	0	0.615171594	0	0	53.69379885	7	0
3/14/2019	OCG302	299438	53.07862724	0	26	0	19.98402300	0	16.90816504	13.83230704	3.07585796	0	0	0	0.615171594	0	0	53.07862724	6	0
3/15/2019	OCG302	299438	52.46345564	0	26	0	19.98402300	0	16.90816504	13.83230704	3.07585796	0	0	0	0.615171594	0	0	52.46345564	5	0
3/16/2019	OCG302	299438	51.84828401	0	26	0	19.98402300	0	16.90816504	13.83230704	3.07585796	0	0	0	8	0	0	51.84828401	4	8
3/17/2019	OCG302	299438	43.84828401	0	26	0	19.98402300	0	16.90816504	13.83230704	3.07585796	0	0	0	0	0	0	43.84828401	3	0
3/18/2019	OCG302	299438	43.84828401	0	26	0	19.98402300	0	16.90816504	13.83230704	3.07585796	0	0	0	0.615171594	0	0	43.84828401	2	0
3/19/2019	OCG302	299438	43.23311244	0	26	0	19.98402300	0	16.90816504	13.83230704	3.07585796	0	0	0	0.615171594	0	0	43.23311244	1	0
3/20/2019	OCG302	299438	42.61794085	0	34	0	20.33267064	0	17.25681274	14.18095474	3.07585796	0	0	0	0.615171594	0	0	42.61794085	0	14
3/21/2019	OCG302	299438	42.00276934	0	34	0	20.33267064	0	17.25681274	14.18095474	3.07585796	0	0	0	0.615171594	0	0	42.00276934	8	8

MEIO – INDEPENDENT & DEPENDENT

Item: 000302 - Olivia's Cl Gal 2 oz
 PDI Code: Supplier: 015 Supplier Name: Customer A North California Ship Point: Default Location: 011
 On Hand: 0.0000 On Order: 0.0000 Lead Time: 7 Date Code Status

Constrained Allocation Result


Units	Cal Days	Sell Days	
58.0	79.9	56.9	500
0.0	0.0	0.0	Capacity
0.0	0.0	0.0	Maximum Qty (0.0)
0.0	0.0	0.0	Precision
0.0	0.0	0.0	Warehouse Multiple (0.0)
0.0	0.0	0.0	Buying Multiple (1.0)
0.0	0.0	0.0	Minimum Qty (1.0)
0.0	0.0	0.0	Days Adjusted (0)
0.0	0.0	0.0	Special Orders
0.0	0.0	0.0	Event (0.0)
0.0	0.0	0.0	Fwd Buy (0.0)
58.0	79.9	56.9	Need
0.0	0.0	0.0	Balance
0.0	0.0	0.0	On Hand
0.0	0.0	0.0	On Order
0.0	0.0	0.0	Backorder
0.0	0.0	0.0	Reserved
0.0	0.0	0.0	Held Qty (0.0)
58.0	58.8	41.8	Order Up To Level
0.0	0.0	0.0	Shelf Life (0.0)
16.6	19.0	14.0	Effective Order Cycle (0.0)
44.2	46.8	32.8	Order Trigger Point
3.1	7.0	5.0	Supplier Order Cycle
41.1	39.8	27.8	Low Stock Point
27.1	7.0	5.0	Lead Time
14.0	32.8	22.8	Safety Stock

Order Detail

Item Details

- 12.30 4 Weekly Forecast
- None Seasonal 4 Weekly Forecast
- 99.00 Service Level Goal
- \$5.78 Selling Unit Cost
- 5.78 Alternate Cost
- \$5.78 Effective Cost
- 32.0 Dependent Demand
- Recent Demand History
- 0.00 Demand WTD
- 0.00 2/17/2019
- 0.00 2/10/2019
- 0.00 2/3/2019
- 0.00 1/27/2019

MEIO – INDEPENDENT & DEPENDENT

58.0	58.8	41.8	Order Up To Level	
0.0	0.0	0.0	Shelf Life (0.0)	
16.6	19.0	14.0	Effective Order Cycle (0.0)	
44.2	46.8	32.8	Order Trigger Point	
3.1	7.0	5.0	Supplier Order Cycle	
41.1	39.8	27.8	Low Stock Point	
27.1	7.0	5.0	Lead Time	
14.0	32.8	22.8	Safety Stock	

Item Details	
12.30	4 Weekly Forecast
None Seasonal 4 Weekly Forecast	
99.00	Service Level Goal
\$5.78	Selling Unit Cost
5.78	Alternate Cost
\$5.78	Effective Cost
32.0	Dependent Demand

- Safety Stock – Independent only $22.8 \times 0.62 = 14$ units
- Lead Time – Independent + DD ($5 \times 0.62 = 3.1$ units + 24 DD units) 27.1 units
- EOC – Independent + DD ($14 \times 0.62 = 8.68$ units + 8 DD units) 16.6 units
- OUTL – 57.7 rounded to 58 units

MEIO | TIPS & TRICKS

Some places to look:

- Are the forecasts correct at the store level? Are forecast exceptions reviewed?
- If there is put-away time at the store, is that incorporated into the lead time forecast at the store? At the DC?
- Are store orders received on the expected delivery date? At the DC? Is LT Deviation set correctly?
- Are the service level goals correct at the store level? At the DC?
- Are store orders approved when they are due? At the DC?
- Are non-due orders with LSP alerts reviewed and action taken if necessary?

QUESTIONS?

MULTI-ECHELON INVENTORY OPTIMIZATION

THANK YOU!