



BLUEPRINT

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Agenda

Defining Lead Times

Item vs Supplier Lead Time

Lead Time Deviation Impact

Impact of Inflated Lead Times

Using Lead Time Forecasting

Benefits

7 Essential Elements

1. Demand Forecast
2. ***Lead Time Forecasting***
3. Order Cycle Optimization
4. Safety Stock & Service Level Management
5. Demand Planning & Replenishment
6. Special Orders
7. Order Constraints Validation

Lead Time

Quoted Lead Time

Determines the Order Expected Delivery Date when approving an order
Managed only at the Supplier level

Total Lead Time

Used to build the item SOQ & accounts for any additional time not described in the Quoted Lead Time
Is a component of Safety Stock
Managed at Supplier & Item levels

Ship/Pickup Lead Time

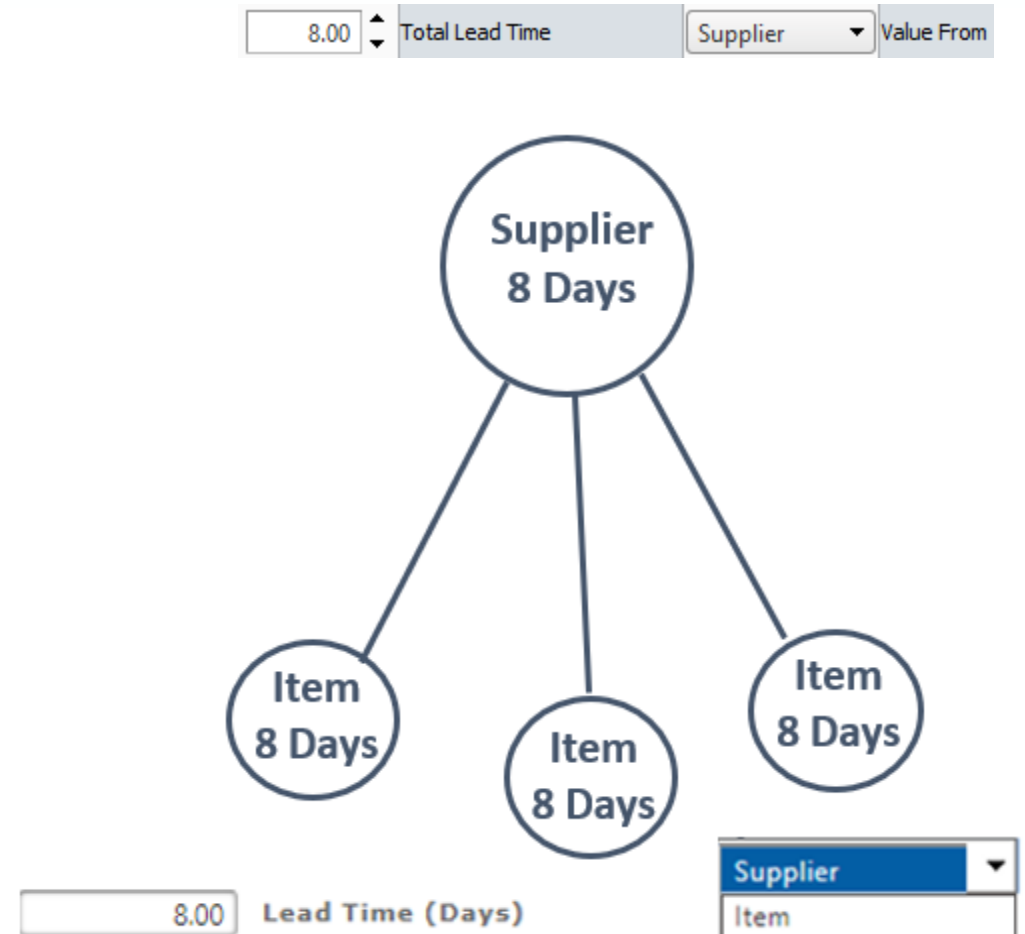
Days from when an order is approved until the date it can be shipped or picked up
Optional use

Lead Time Deviation %

A component of Safety Stock
Managed at Supplier & Item levels

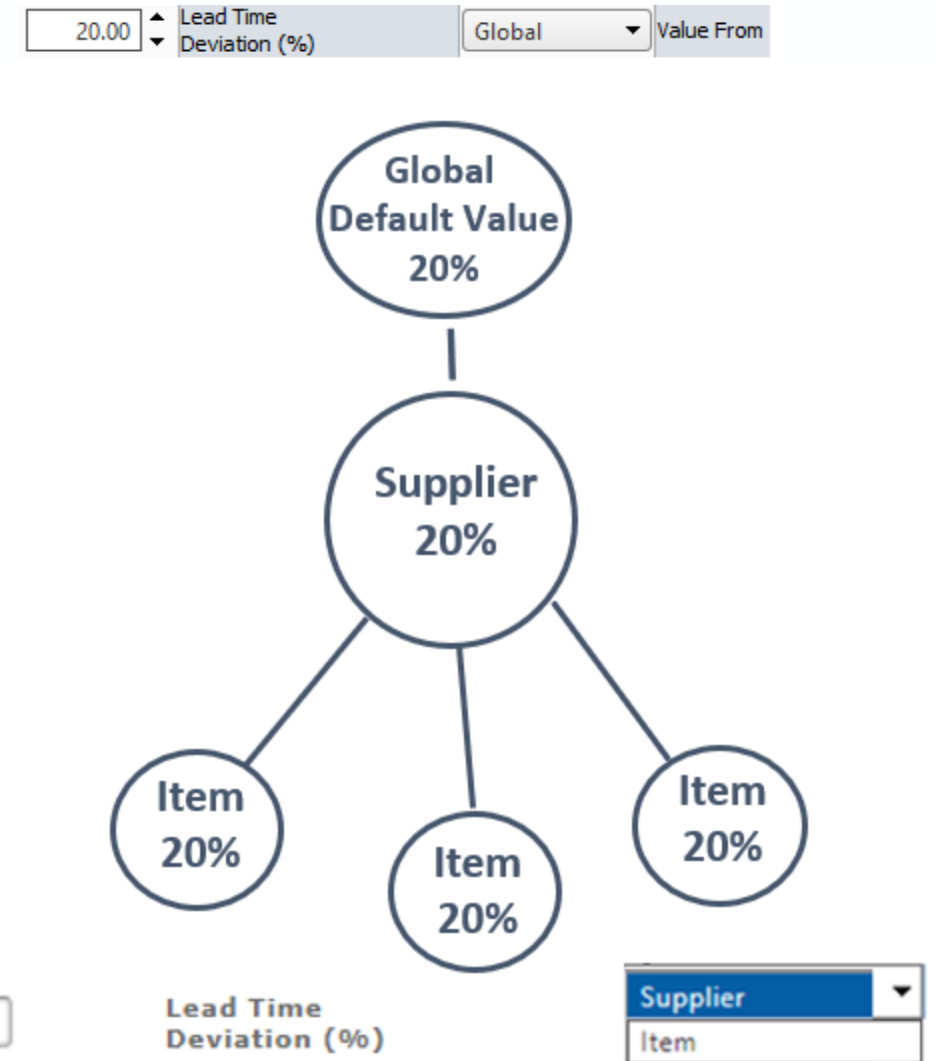
Lead Time

- Items initially inherit the Supplier Total Lead Time
- Can then be managed at the individual Item level



Deviation

- An additional level for Lead Time Deviation %
- Global Value pushes to Supplier
- Supplier pushes to Item
- Can then be managed at Supplier & Item levels



Safety Stock Effects

Major

1. Demand Forecast
2. Demand Deviation %
- 3. Lead Time Total**
- 4. Lead Time Deviation %**
5. Service Level Objective %

Sub-Components

6. Order Cycle
7. Buying Multiple / Minimum Quantity

Lead Time

Although there are multiple components that go into the calculation of safety stock, when lead times start exceeding 45 days, the lead time along with the deviation start to drive the biggest impact.

17 Days

600	39	27	Balance	
600	39	27	On Hand	
0	0	0	On Order	
0	0	0	Backorder	
0	0	0	Reserved	
0	0	0	Held Qty (0)	
481	32	22	Order Up To Level	
0	0	0	Shelf Life (0)	
108	6	5	Effective Order Cycle (0)	
481	32	22	Order Trigger Point	
108	6	5	Supplier Order Cycle	
373	26	17	Low Stock Point	
252	17	11	Lead Time	
121	9	6	Safety Stock	

60 Days

600	39	27	Balance	
600	39	27	On Hand	
0	0	0	On Order	
0	0	0	Backorder	
0	0	0	Reserved	
0	0	0	Held Qty (0)	
1388	87	61	Order Up To Level	
0	0	0	Shelf Life (0)	
95	6	4	Effective Order Cycle (0)	
1388	87	61	Order Trigger Point	
95	6	4	Supplier Order Cycle	
1293	81	57	Low Stock Point	
948	60	42	Lead Time	
346	21	15	Safety Stock	

Lead Time

- Lead Time adjustments should be based on fact and not gut feel
- Padding lead times can have a negative effect as we typically are accounting for enough inventory through SS, specifically the suppliers with a longer lead time

17 Days

600	39	27	Balance	
600	39	27	On Hand	
0	0	0	On Order	
0	0	0	Backorder	
0	0	0	Reserved	
0	0	0	Held Qty (0)	
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Lead Time

Lead Time adjustment of 1 week has more effect then just increasing the lead time

This adjustment has added 7 days to the lead time and, in addition, increased safety stock by an additional 2 days

Low Stock Point now has been adjusted by a total of 9 days

600	39	27	Balance	
600	39	27	On Hand	■
0	0	0	On Order	■
0	0	0	Backorder	■
0	0	0	Reserved	■
0	0	0	Held Qty (0)	■
1388	87	61	Order Up To Level	■
0	0	0	Shelf Life (0)	
95	6	4	Effective Order Cycle (0)	■
1388	87	61	Order Trigger Point	■
95	6	4	Supplier Order Cycle	■
1293	81	57	Low Stock Point	■
948	60	42	Lead Time	■
346	21	15	Safety Stock	■

600	39	27	Balance	
600	39	27	On Hand	■
0	0	0	On Order	■
0	0	0	Backorder	■
0	0	0	Reserved	■
0	0	0	Held Qty (0)	■
1537	96	68	Order Up To Level	■
0	0	0	Shelf Life (0)	
95	6	4	Effective Order Cycle (0)	■
1537	96	68	Order Trigger Point	■
95	6	4	Supplier Order Cycle	■
1442	90	64	Low Stock Point	■
1066	67	47	Lead Time	■
376	23	17	Safety Stock	■

Financial Impact

Monthly Forecast of 497.5 converts to an
18.4 Daily Forecast

Daily Forecast of 18.4 x 9 additional days =
165.8 units

165.8 units * \$147.14 = \$24,395.81

Item Details	
497.51	Monthly Forecast
None	Seasonal Monthly Forecast
97.00	Service Level Goal
\$147.14	Selling Unit Cost
147.14	Alternate Cost
\$147.14	Effective Cost
0	Dependent Demand
Recent Demand History  	
260.25	Demand MTD
488.75	8/1/2019
497.33	7/1/2019
162.58	6/1/2019
810.92	5/1/2019

Lead Time

Deviation 20%

Units	Cal Days	Sell Days	
112	38	28	SOQ
0	0	0	Capacity
0	0	0	Maximum Qty (0)
0	0	0	Precision
0	0	0	Warehouse Multiple (0)
0	0	0	Order Balance Multiple (0)
4	1	1	Buying Multiple (14)
0	0	0	Minimum Qty (14)
39	14	10	Days Added (14)
0	0	0	Special Orders
0	0	0	Event (0)
0	0	0	Fwd Buy (0)
68	23	17	Need
254	87	62	Balance
184	63	45	On Hand
70	24	17	On Order
0	0	0	Backorder
0	0	0	Reserved
0	0	0	Held Qty (0)
322	111	79	Order Up To Level
0	0	0	Shelf Life (0)
20	7	5	Effective Order Cycle (0)
322	111	79	Order Trigger Point
20	7	5	Supplier Order Cycle
302	104	74	Low Stock Point
230	80	56	Lead Time
72	24	18	Safety Stock

Deviation 10%

Units	Cal Days	Sell Days	
112	38	28	SOQ
0	0	0	Capacity
0	0	0	Maximum Qty (0)
0	0	0	Precision
0	0	0	Warehouse Multiple (0)
0	0	0	Order Balance Multiple (0)
0	0	0	Buying Multiple (14)
0	0	0	Minimum Qty (14)
68	23	17	Days Added (23)
0	0	0	Special Orders
0	0	0	Event (0)
0	0	0	Fwd Buy (0)
44	15	11	Need
254	87	62	Balance
184	63	45	On Hand
70	24	17	On Order
0	0	0	Backorder
0	0	0	Reserved
0	0	0	Held Qty (0)
298	103	73	Order Up To Level
0	0	0	Shelf Life (0)
20	7	5	Effective Order Cycle (0)
298	103	73	Order Trigger Point
20	7	5	Supplier Order Cycle
278	96	68	Low Stock Point
230	80	56	Lead Time
48	16	12	Safety Stock

“

Lead Time Forecasting

Lead Time Forecasting is a solution that automatically updates our lead time forecast and deviation based on actual historical receipts. We look at the reality of our lead time and update our forecast and deviation at the end of each period based on actual receipt history.

Lead Time Forecasting

Activation

- Activated at the item level, Lead Time Forecasting provides the ability to track item by item updates
- On the Item Manager screen, select the Activate Lead Time Forecasting box and then click Update

Lead Time Forecasting

☐ **Activate Lead Time Forecasting**

Original Lead Time (Days)

Original Lead Time Deviation %

Last Lead Time Forecast Date

Lead Time Forecasting

Activation

- Original LT information is stored
- Adjustments will be shown above the original LT information
- Allows for easy manual adjustments anytime we know expectations will change

Item Lead Time	
<input type="text" value="84.00"/>	Lead Time (Days)
<input checked="" type="checkbox"/>	Lead Time in Calendar Days
<input type="text" value="8"/>	Lead Time Deviation %



Lead Time Forecasting	
<input checked="" type="checkbox"/>	Activate Lead Time Forecasting
<input type="text" value="97"/>	Original Lead Time (Days)
<input type="text" value="10"/>	Original Lead Time Deviation %
<input type="text" value="8/4/2019"/>	Last Lead Time Forecast Date







Lead Time Forecasting

Activation

Activating Lead Time Forecasting on multiple items is best done through Mass Maintenance

2. Select records to change:

[0 results]  

	Supplier: Location	▼	Equals	▼	<input type="text"/>	
	Supplier: Supplier	▼	Equals	▼	<input type="text"/>	
	Supplier: Buyer	▼	Is	▼	Anna Campbell	

3. Specify changes to be made to the records in the filtered list:

Item: Activate Lead Time Forecasting ▼ set as ▼ True ▼  Add

Lead Time Forecasting

Global Factors

The factors in the Global Controls help us describe the Deviations Limits and Receipt Threshold used for the calculation

The Deviation Limits help control the system from putting too big of a weighting factor or acting too aggressively on possible one-off receipts

3	Very High Deviation Limit
2	Lead Time Deviation Low Limit
70.00	Lead Time Receipt Threshold

Lead Time Forecasting

Deviation Limit Example

- Current Lead Time 10 days
- Current Deviation 20%
- Receipt takes 30 days

(Current Forecast + (Deviation High Limit * (Deviation Percent * Current Forecast))

$$(10 + (3 * (20\% \text{ of } 10)) = 16$$

SCP would then only use 16 days for that receipt at the end of the period for the calculation

Lead Time Forecasting

Receipt Threshold

70.00

Lead Time Receipt Threshold

Describes the % of the ordered inventory item by item that we must receive before we stop the lead time calculation for that specific order

Partial Shipments

The system will take an average of all receipts until we meet the Lead Time Receipt Threshold.

In days $3 + 5 + 7 =$ an average of 5.5 days would now be used as the lead time receipt for this order.

Lead Time Forecasting

Order Approval

Orders can be excluded from process when approving an order

- Expediting orders
- Holiday or Vacation orders
- Large buys (supplier needs additional lead time)



Lead Time Forecasting

Benefits

- Improve Service Level
- Inventory reduction on more reliable suppliers
- Refined safety stock numbers on all suppliers
- User knowledge on supplier reliability
- Order placement with confidence

Lead Time Forecasting

Reporting

Month&Year of LastLeadTimeForecastDate ↓	Total LeadTimeDays	Total LeadTimeVariability	Total OriginalLeadTimeDays	Total OriginalLeadTimeVariability	Total SafetyStockUnits	Total SafetyStockDollars
Jun 2022	31.65	0.2%	33.00	0.20	5.35	\$462.10
Oct 2022	27.22	0.3%	33.00	0.20	3.29	\$158.78
Oct 2022	29.38	0.3%	33.00	0.20	5.15	\$517.05
Oct 2022	31.05	0.2%	33.00	0.20	2.83	\$136.54
Oct 2022	24.48	0.3%	33.00	0.20	8.29	\$715.81
Oct 2022	28.90	0.3%	33.00	0.24	11.02	\$793.24
Oct 2022	29.03	0.3%	33.00	0.20	3.06	\$266.82
Oct 2022	29.28	0.3%	33.00	0.20	6.11	\$436.79
Oct 2022	28.55	0.3%	33.00	0.20	10.82	\$414.77
Oct 2022	31.05	0.2%	33.00	0.20	1.41	\$134.15



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