

# THE RIGHT INVENTORY AT THE RIGHT TIME



**Dynamic Customer Service Levels:  
Evolving Safety Stock  
Requirements for Changing  
Business Needs**

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# INTRODUCTIONS



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Ahold-Delhaize



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# AGENDA

**Company Overview**

**Problem Statement**

**Methodology**

**Results**

**Conclusion**

# COMPANY OVERVIEW

**FOOD LION**



**1,100 + Stores**



**6 Distribution Centers**



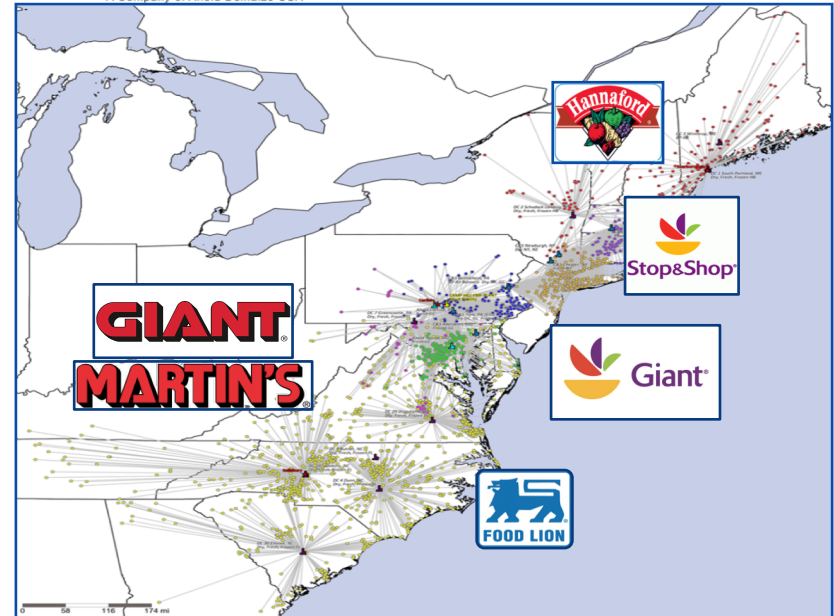
**\$11.6 Billion in Sales/Year**



**454 Million Cases/Year**



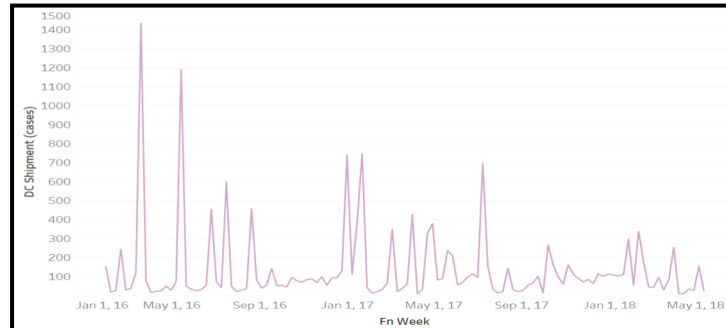
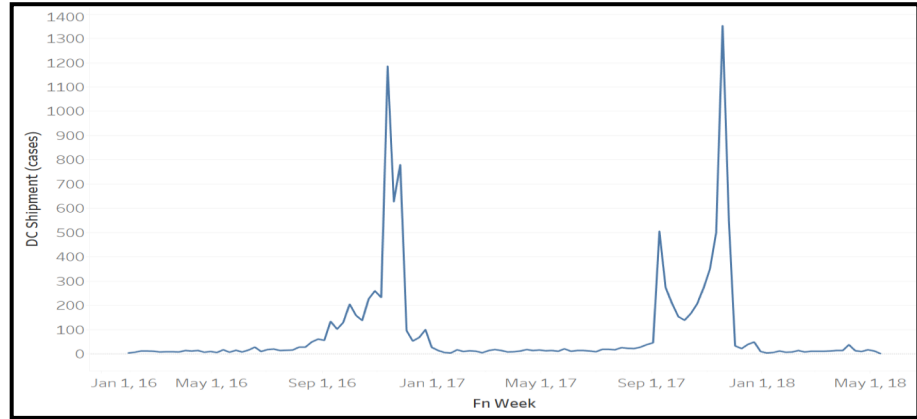
A Company of Ahold Delhaize USA



# NATURE OF THE INDUSTRY



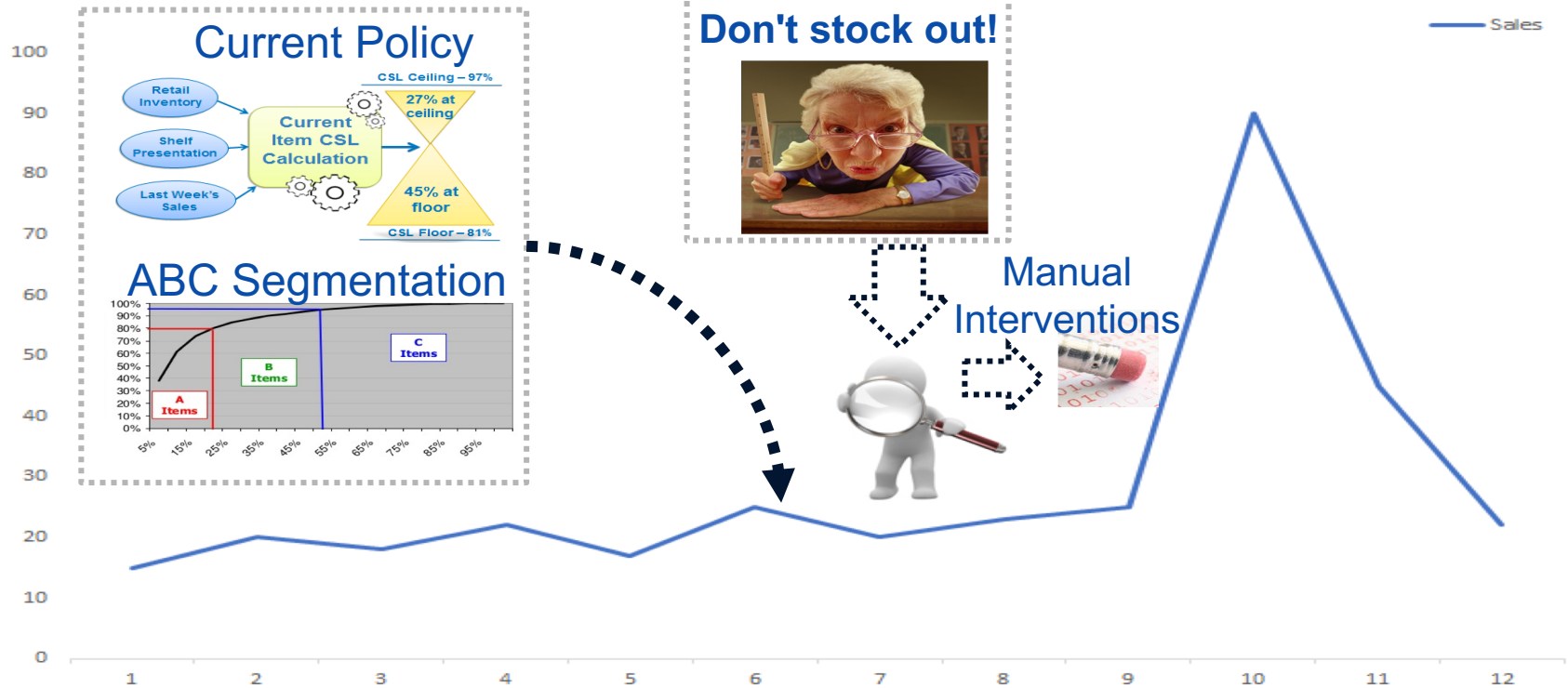
# NATURE OF THE INDUSTRY



# PROBLEM

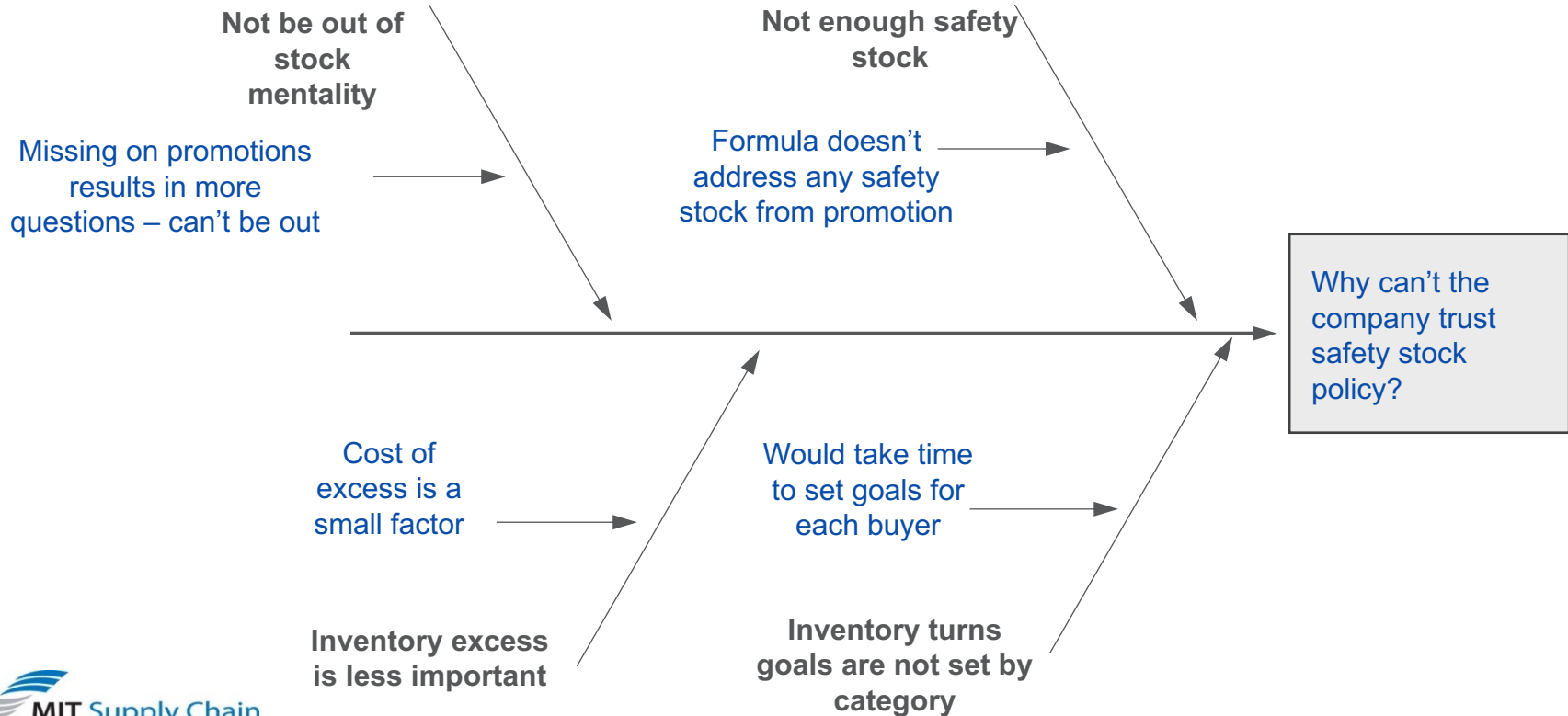


# WHY DON'T THEY TRUST THE SYSTEM?





# CAUSES OF MISTRUST



# CLASSIFICATION CRITERIA



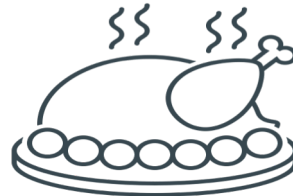
## Promotion

Item with a price reduction



## Key Item

Important for the brand or company



## Seasonal

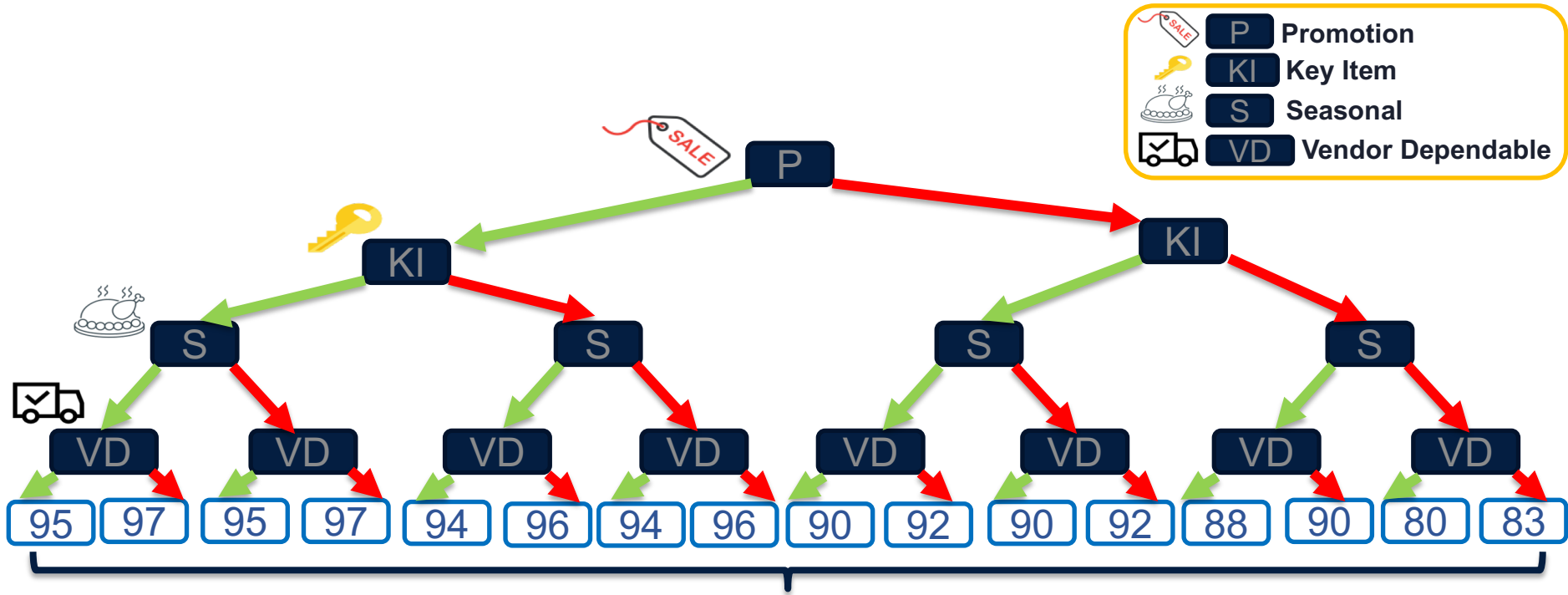
High and low demand depending on the season



## Vendor Dependable

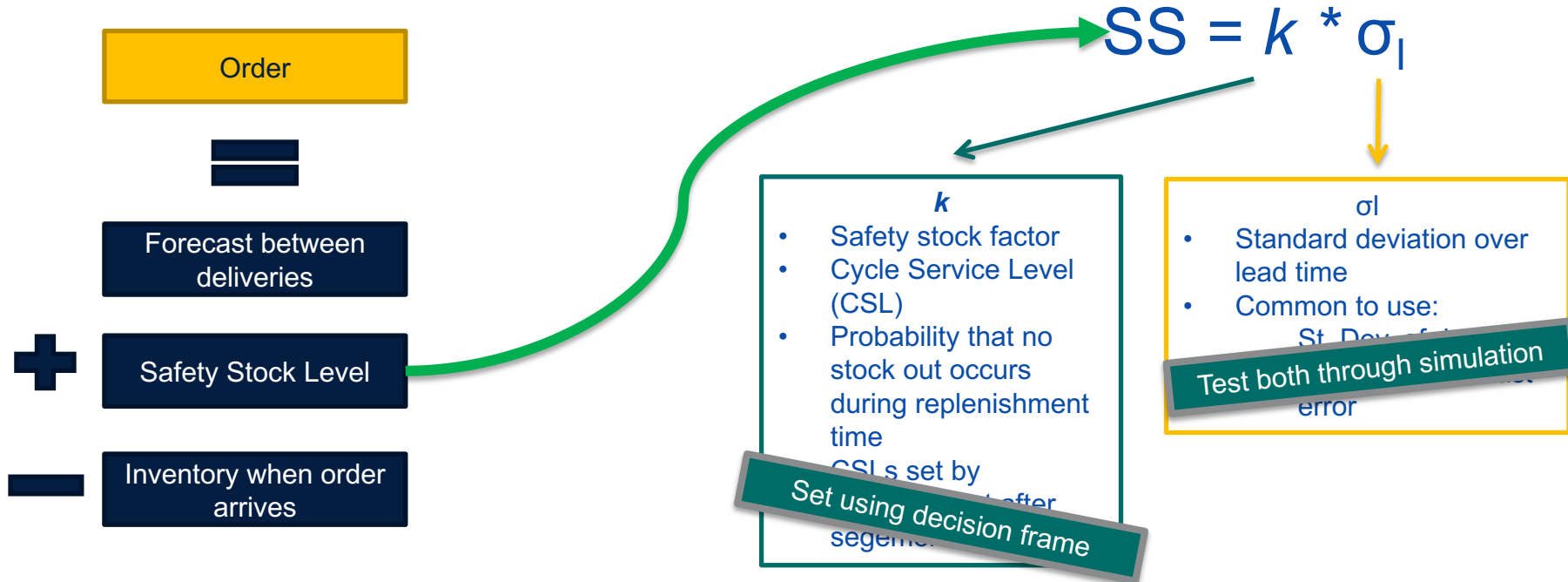
Consistently delivers critical product in full

# DECISION FRAME

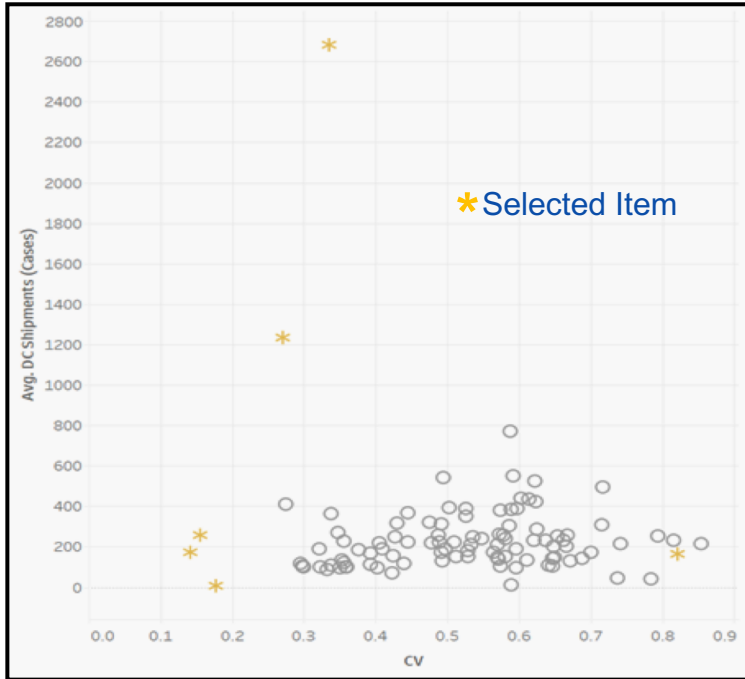


16 Unique Cycle Service Level Classes

# INVENTORY POLICY



# SIMULATIONS



## Item Selection

- CV vs. Avg. Weekly Demand
- Fast and Slow Movers
- Promoted and Non-Promoted
- Seasonal and Non-Seasonal

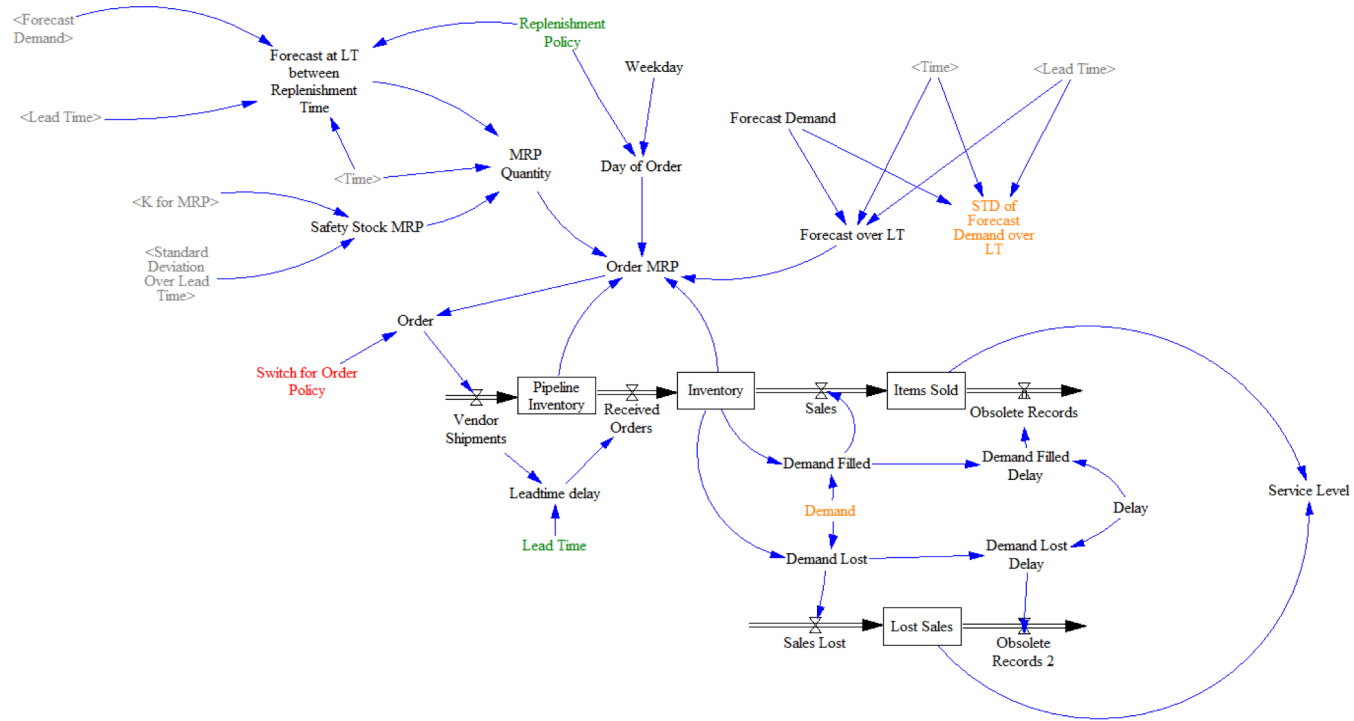
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## Simulations

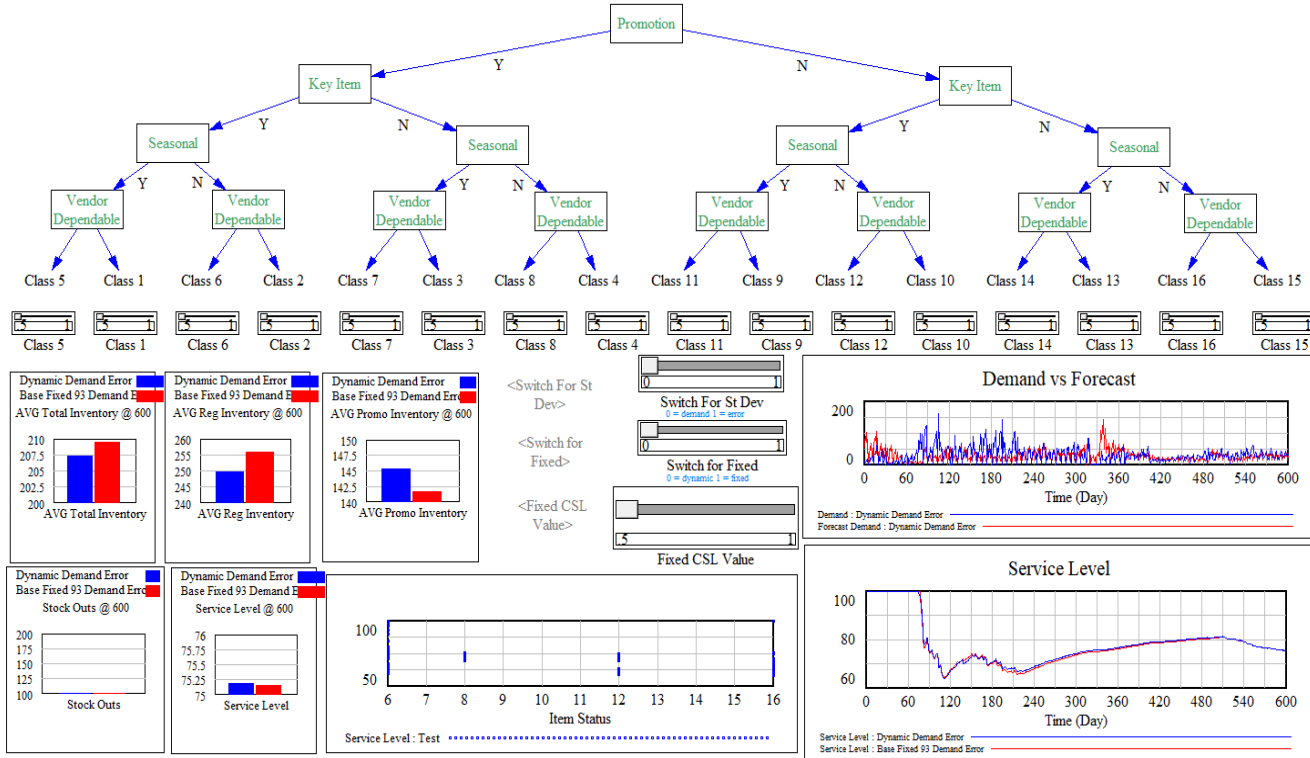
1. Fixed CSL
2. Standard Deviation
3. Dynamic
4. Adjusted Dynamic

# SYSTEM DYNAMICS (VENSIM)

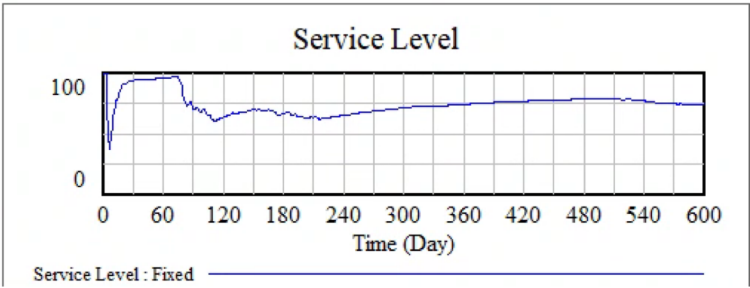
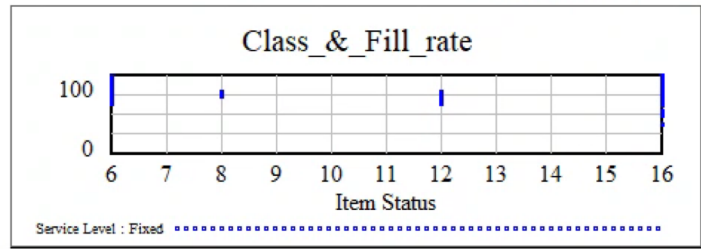
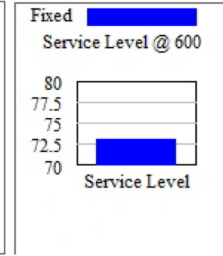
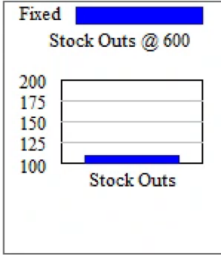
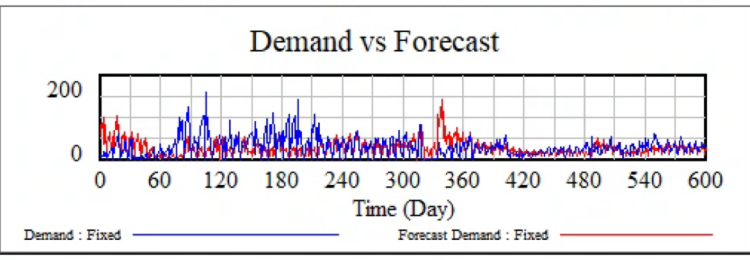
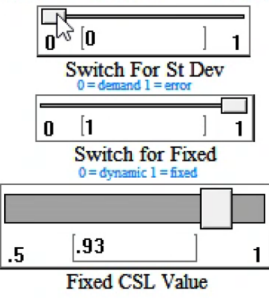
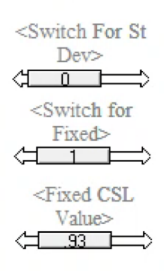
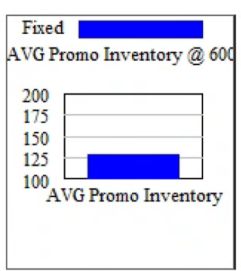
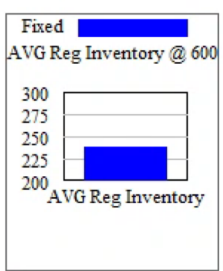
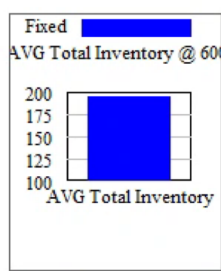
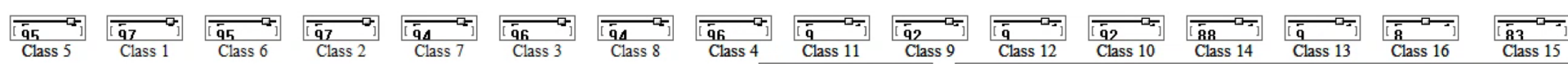
*Better understanding of the dynamics of the process!*



# SYSTEM DYNAMICS (VENSIM)



# SYSTEM DYNAMICS MODEL IN PRACTICE

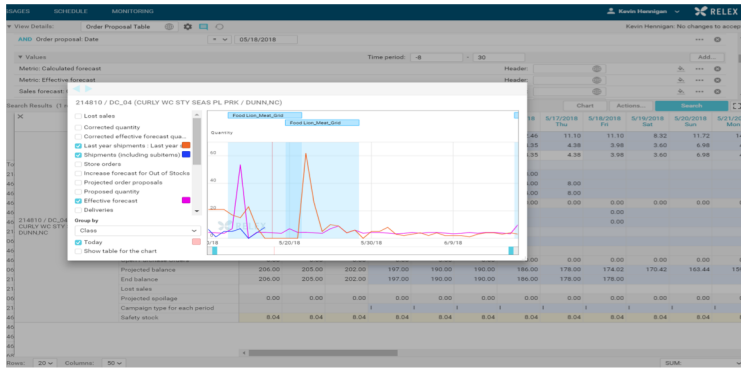




# RELEX

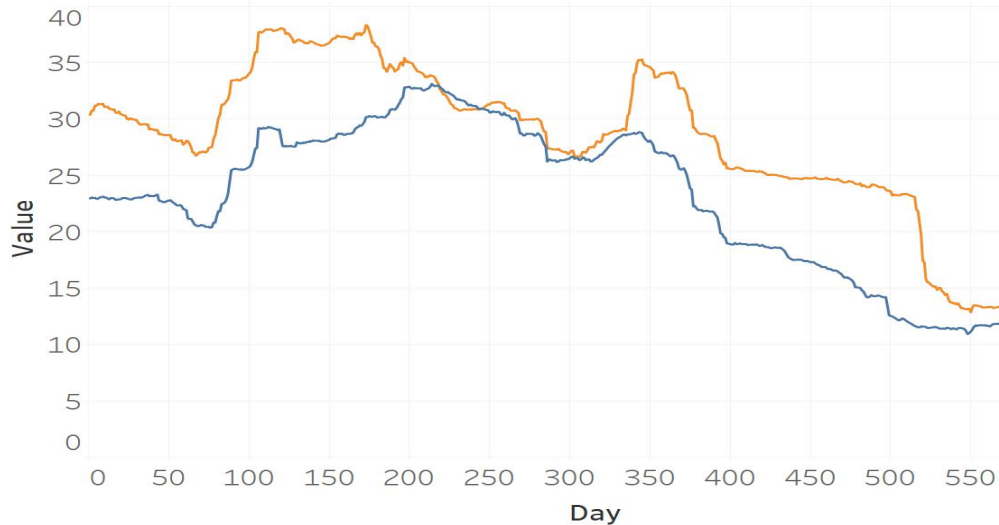


- Current software provider
- Easily customizable for a variety of simulations
- Solutions can be implemented in production environment



The screenshot displays a detailed data table in the RELEX software interface. The table has columns for 'Item', 'Location code', 'Proposed', 'Vendor code', 'Vendor name', 'Tag for activity', 'Has substitution', 'Qty to order', and 'Alt item'. The table lists various items and their associated data. The interface also includes a search bar, a 'View Details' button, and a 'Time period' dropdown menu.

# RESULTS: STANDARD DEVIATION DIFFERENCE



Measure Names  
■ SD Demand  
■ SD FCST Error

## Results

- SD of Demand
- 5 % Inventory Reduction
- 1 % Fill Rate Reduction

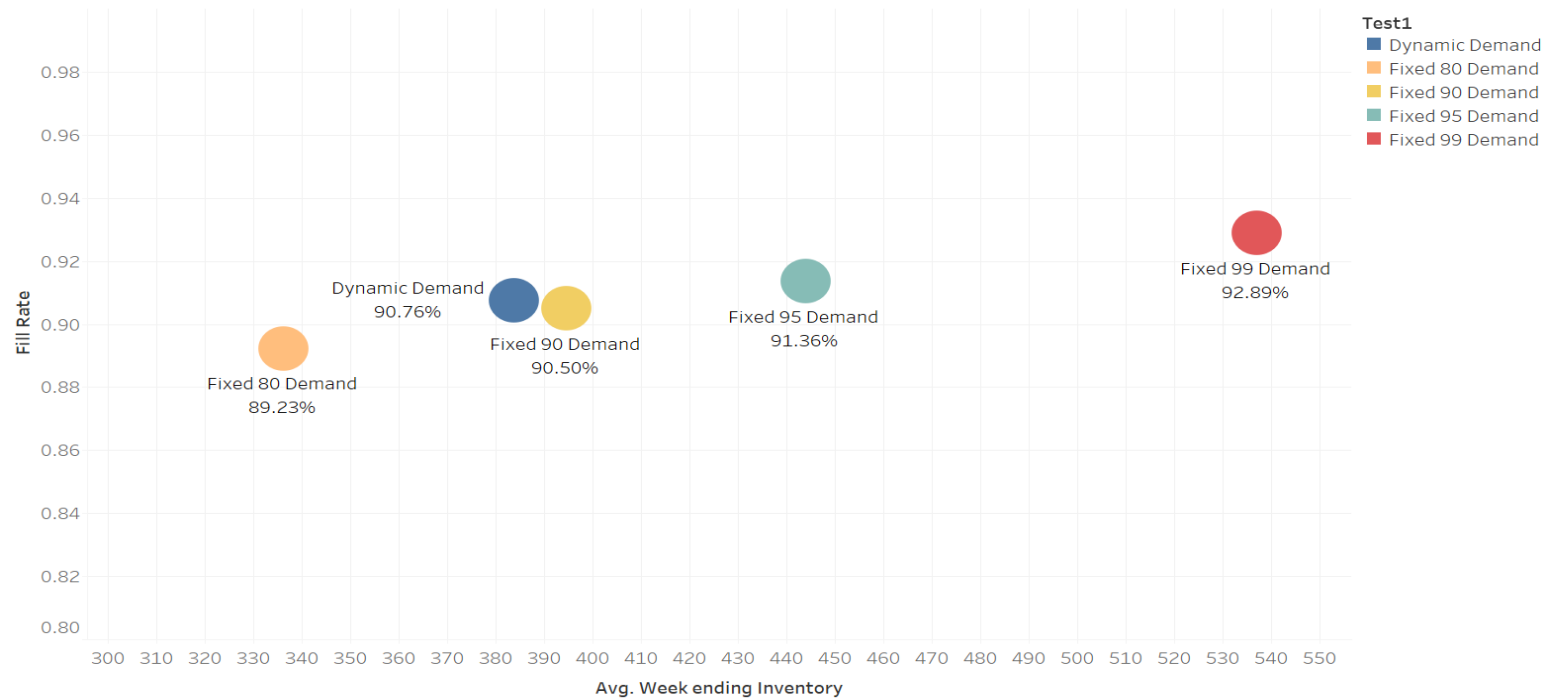


## Takeaway

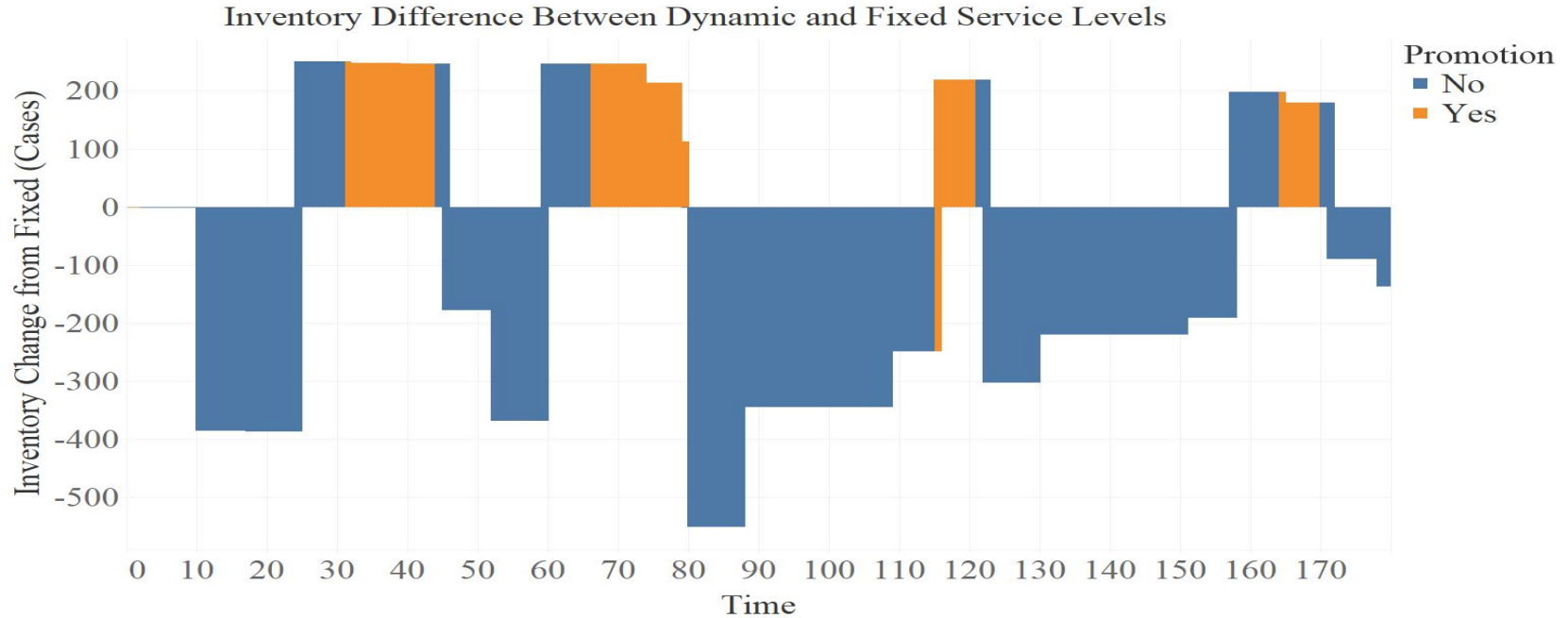
- Safety Stock as a buffer against variability in forecast
- Adjust using CSL not SD

# INITIAL SIMULATION RESULTS

6180 Texas Pete



# ADJUSTED DYNAMIC VS. FIXED



18% Inventory Reduction  
With 91% Fill Rate

# NEXT STEPS & TAKEAWAYS

## Next Steps

- Apply dynamic CSLs across categories
- Work on implementation

## Takeaways

- Buffer for uncertainty in forecast
- Use dynamic CSLs for items of varying importance
- Incorporate decision makers in modeling process

# QUESTIONS?