

# **Welcome to Session 210**

## ***How Multi-Echelon Networks Drive Improved Inventory Turns and Reduce Working Capital***

**Presented by:**

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**Sr. Managing Partner**

**Sponsored by:**



# Today's Agenda

Why Develop a Supply Chain Strategy

Supply and Demand

Supply Chain Networks

Client Case Study

Recap

Questions

# Today's Agenda

Why Develop a Supply Chain Strategy

# Supply Chain Strategy

Primary Strategy	Source of Advantage	Basis of Competition	Key Supply Chain Contributor
Innovation	Brand and unique technology	Desirable and innovative products	Time to market
Cost	Cost-efficient operations	Lowest price in the product category	Efficient, low cost infrastructure
Service	Superb service	Tailored to meet customer specific needs	Designed "from the customer in"
Quality	Safest, most reliable products	Product you can count on	Supply chain excellence and quality control

Inventory Turns



SKU Count



Operational \$\$



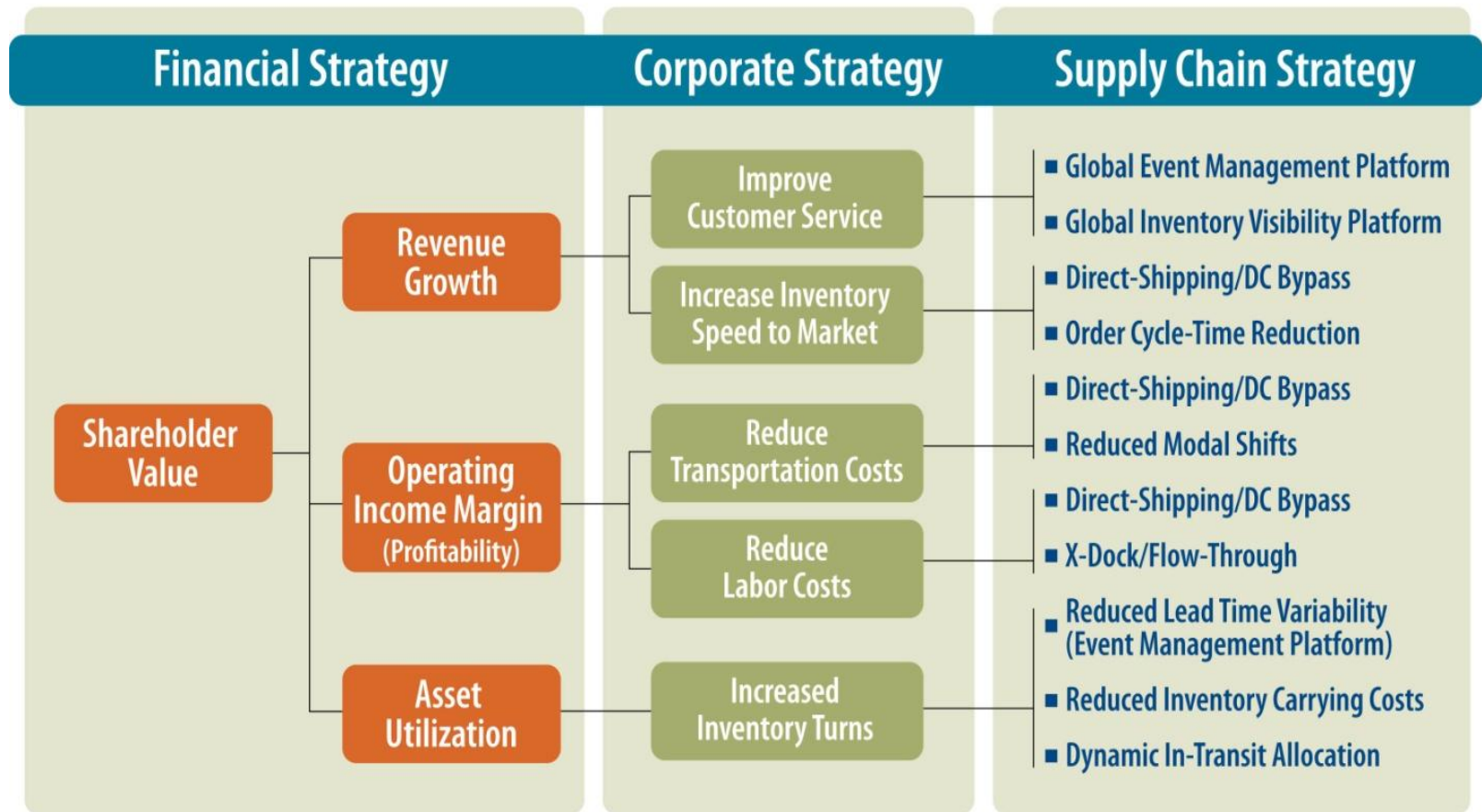
Supply Variability



Inventory Position



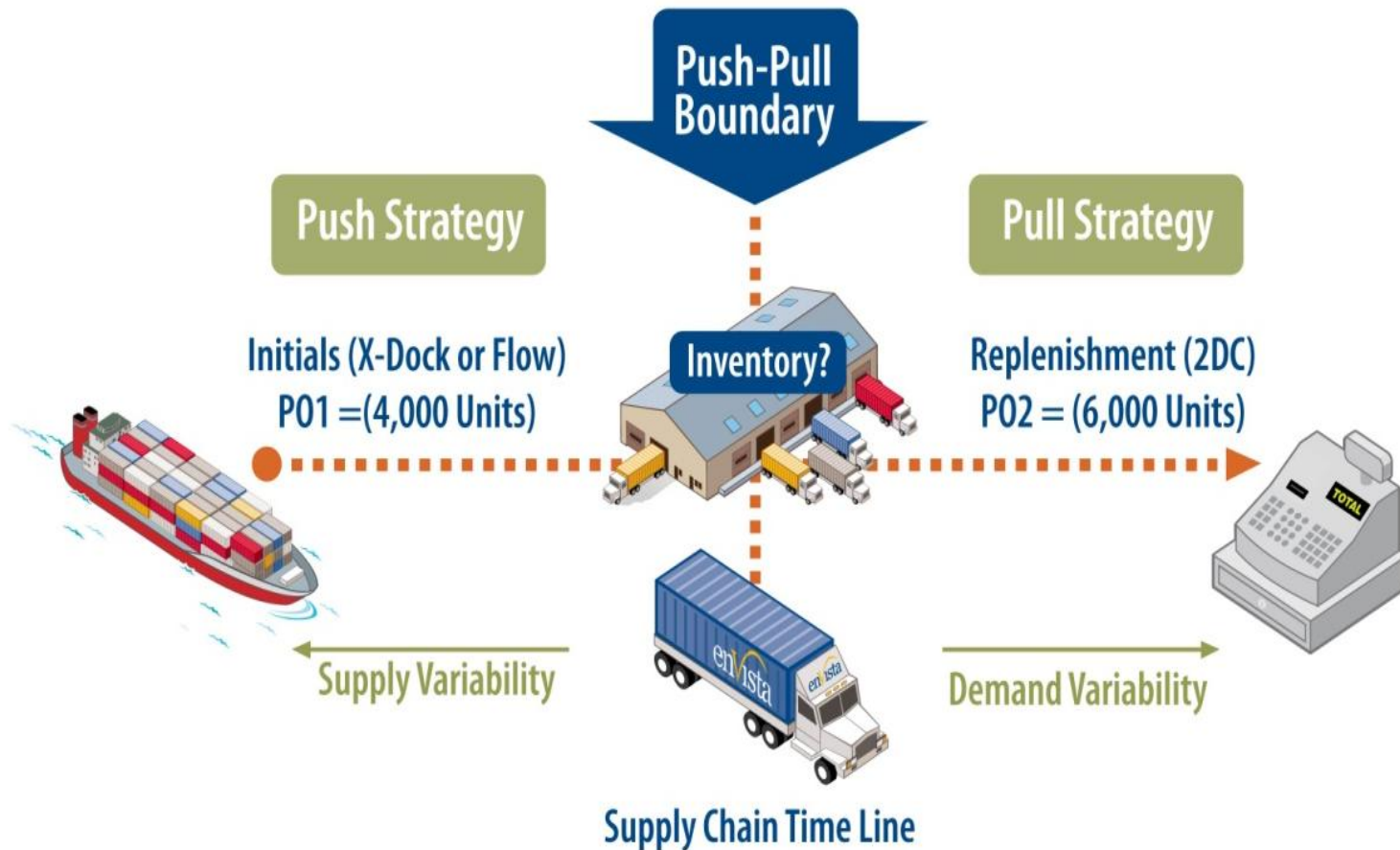
# Business Drivers



# Today's Agenda

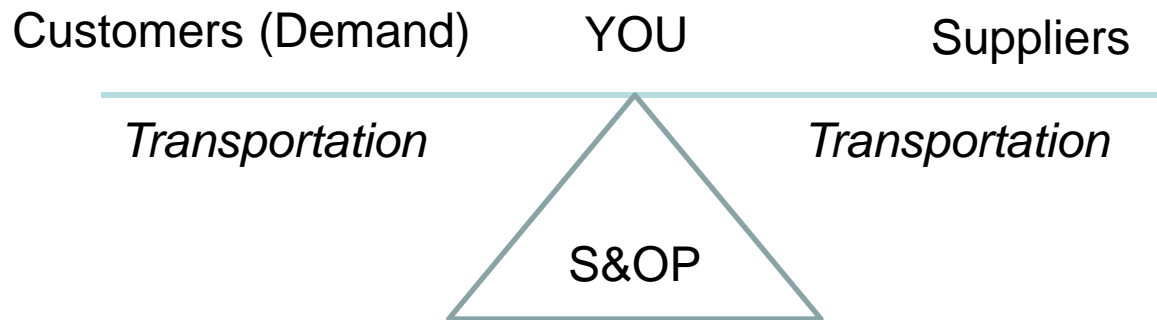
Supply and Demand

# Push vs. Pull Supply Chains



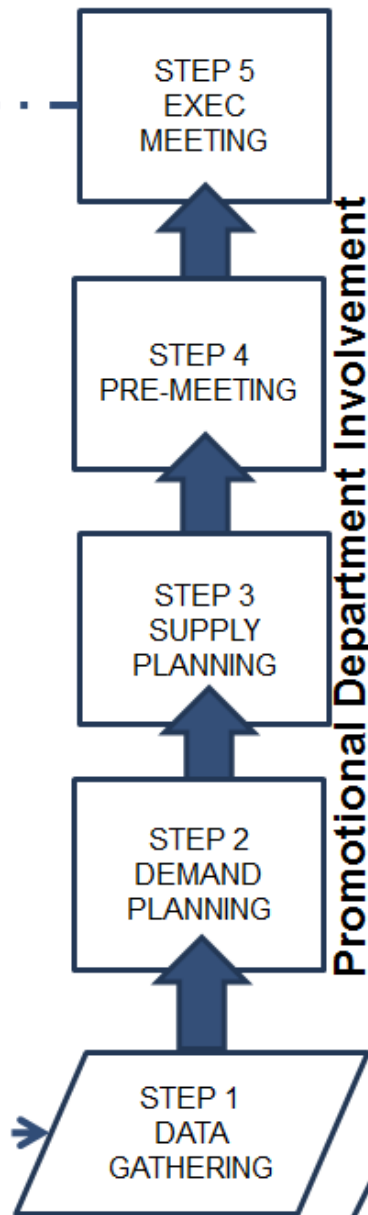
# S&OP Defined

- S&OP is simply balancing supply with demand

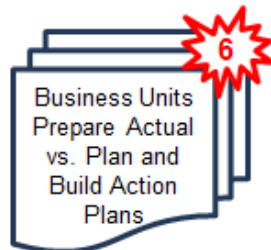


- What is important is to understand (quantify and qualify) demand and supply variability

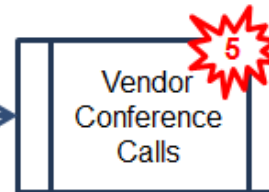
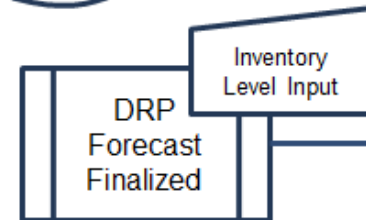




Decisions & Updated Game Plan

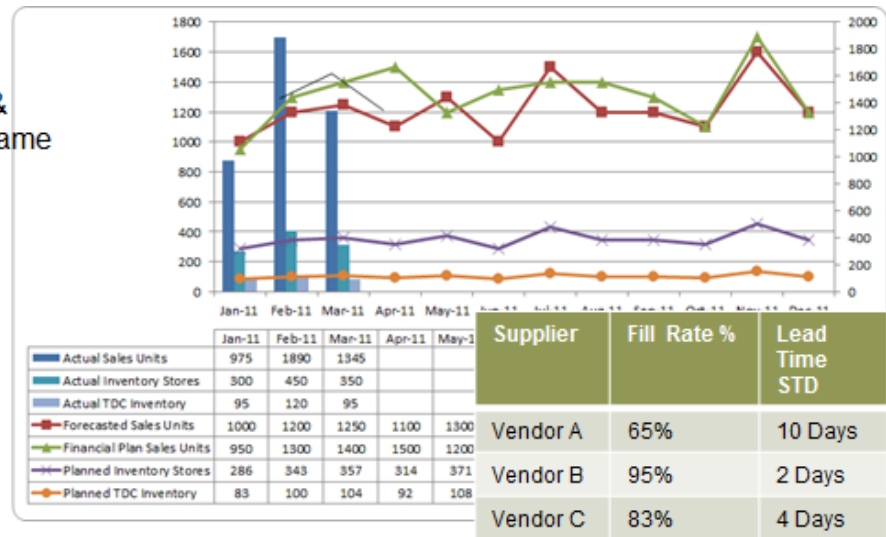
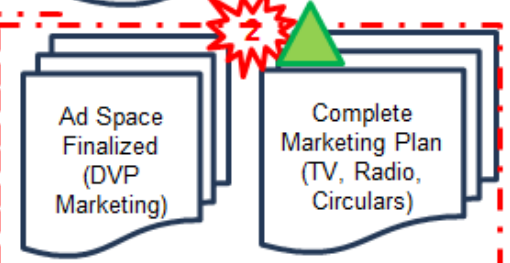
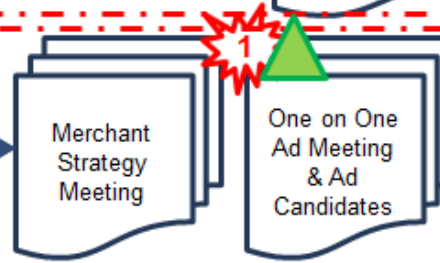


- Tires
- Service
- OTC



Sales/Merchants

Inventory Marketing

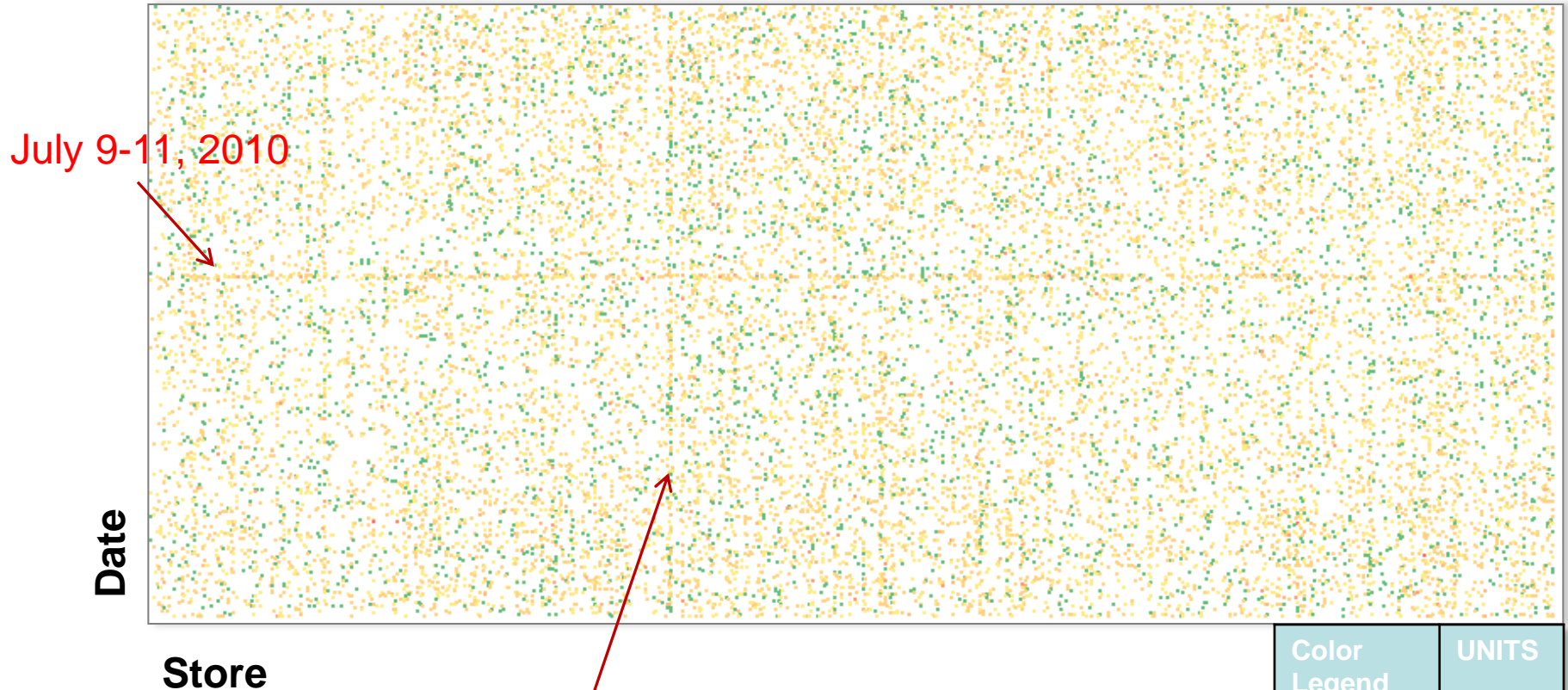


Supplier	Fill Rate %	Lead Time STD
Vendor A	65%	10 Days
Vendor B	95%	2 Days
Vendor C	83%	4 Days

# It is Important to Understand What Shapes Your Demand

- Wants vs. Need (Basic Economics)
  - Tire (Need)
  - New iPhone 4S (most likely a Want)
- Demand (variability) can be shaped by:
  - Promotions/Advertisement
  - Price
  - Demographics
  - Geography
  - Sales Execution and Metrics
  - Rebates
  - Weather

# A “Need Item”

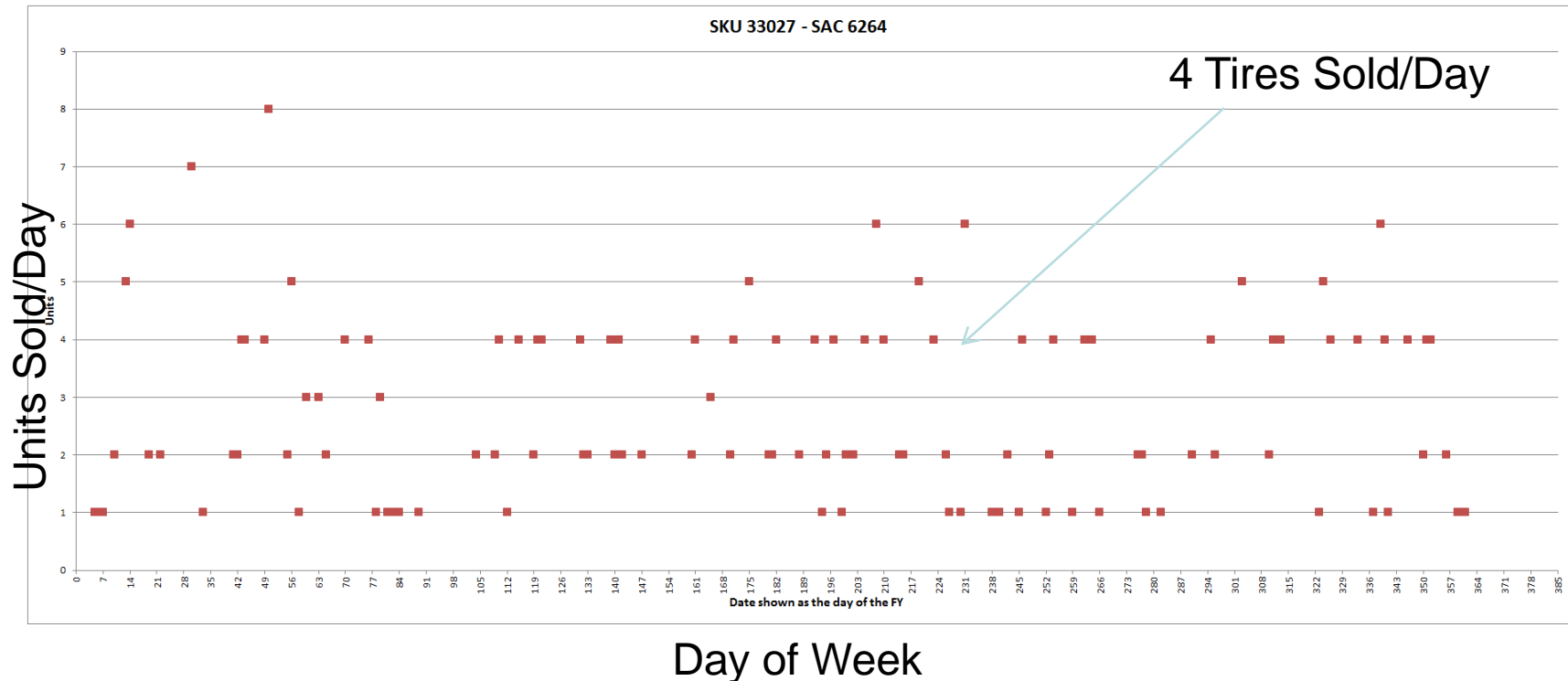


SAC\_6264: Staten Island, NY, 311 units\*, 112 days.

\* Sales units during FY2010

Color Legend	UNITS
Red	6+
Orange	4
Yellow	2
Green	1

# Intermittent Demand



- Total 311 Units sold over 364 Days
- High Volume with High Variability
- 12 of 121 Days which sold > 5

# A “Want Item”

PUSH

PULL or  
PUSH

PULL

December

# Supply Variability

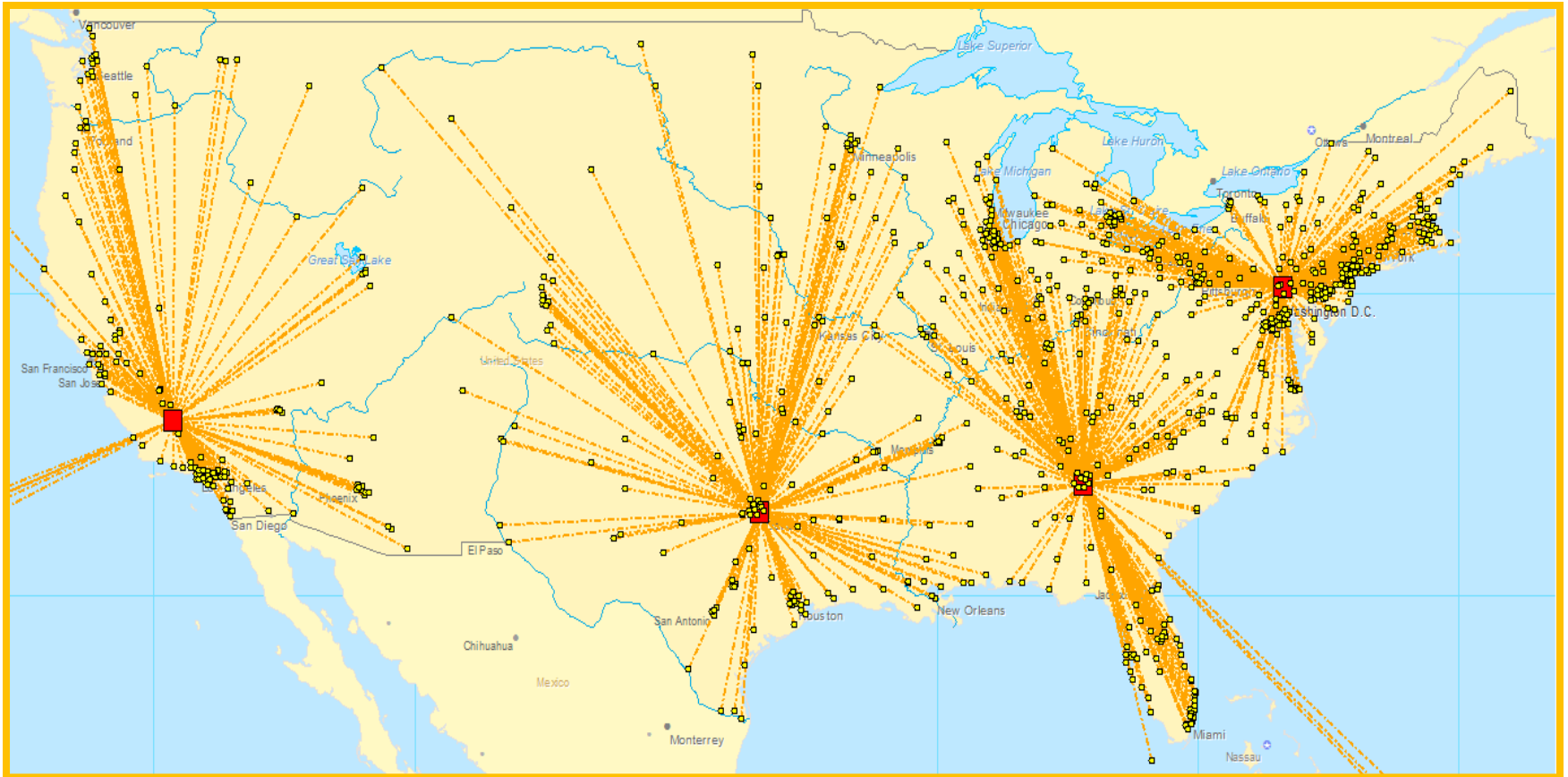
- Order Cycle Time
- Purchase Order Fill Rates (%)
- Transportation Lead Time
  - PPDA
  - Freight Collect
- Supply Lead Time is not as important as predictable Lead Time and Fill %
- Visibility is KEY!

# Today's Agenda

Supply Chain Networks



# Single Echelon (Traditional Network)

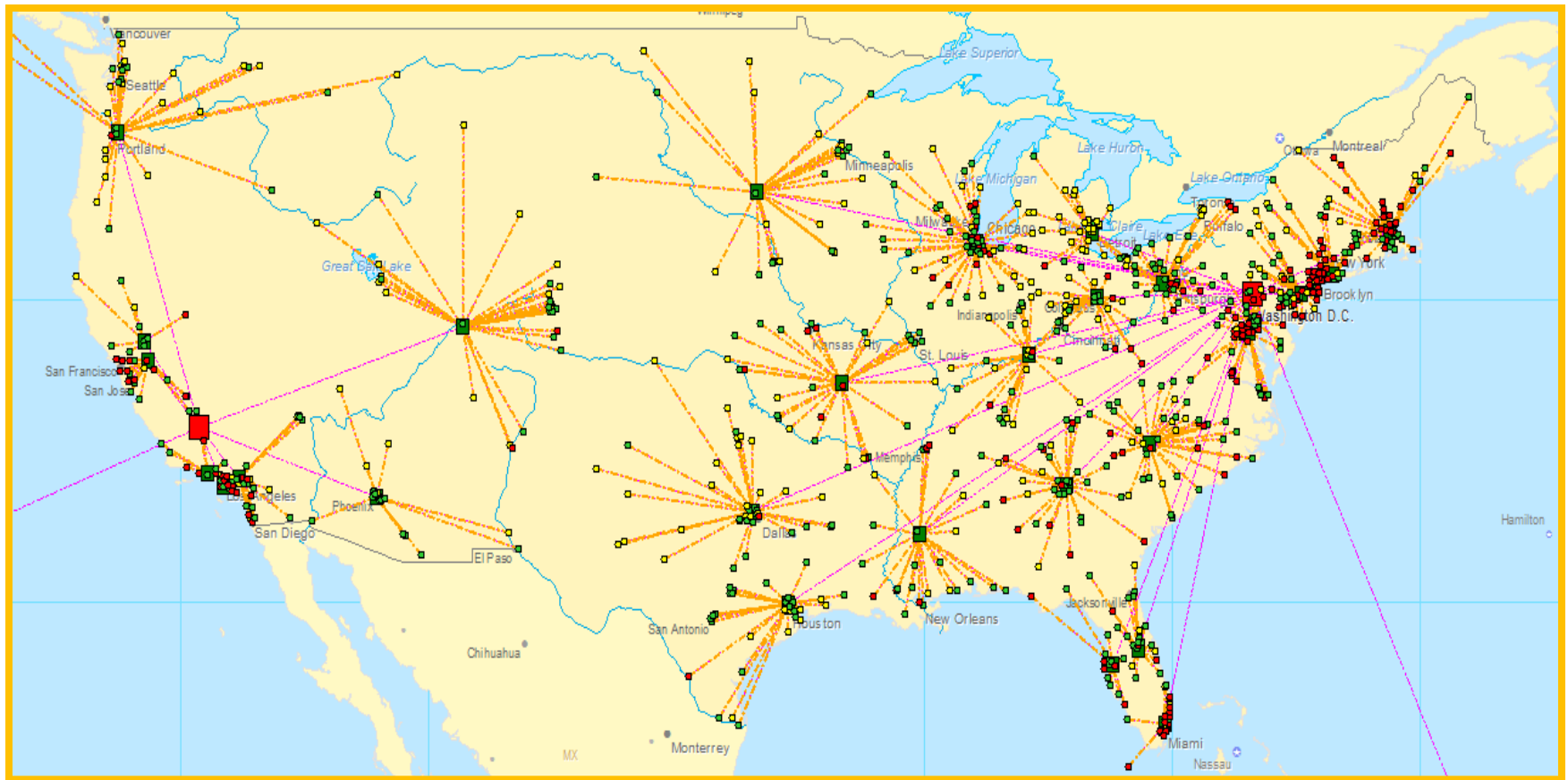




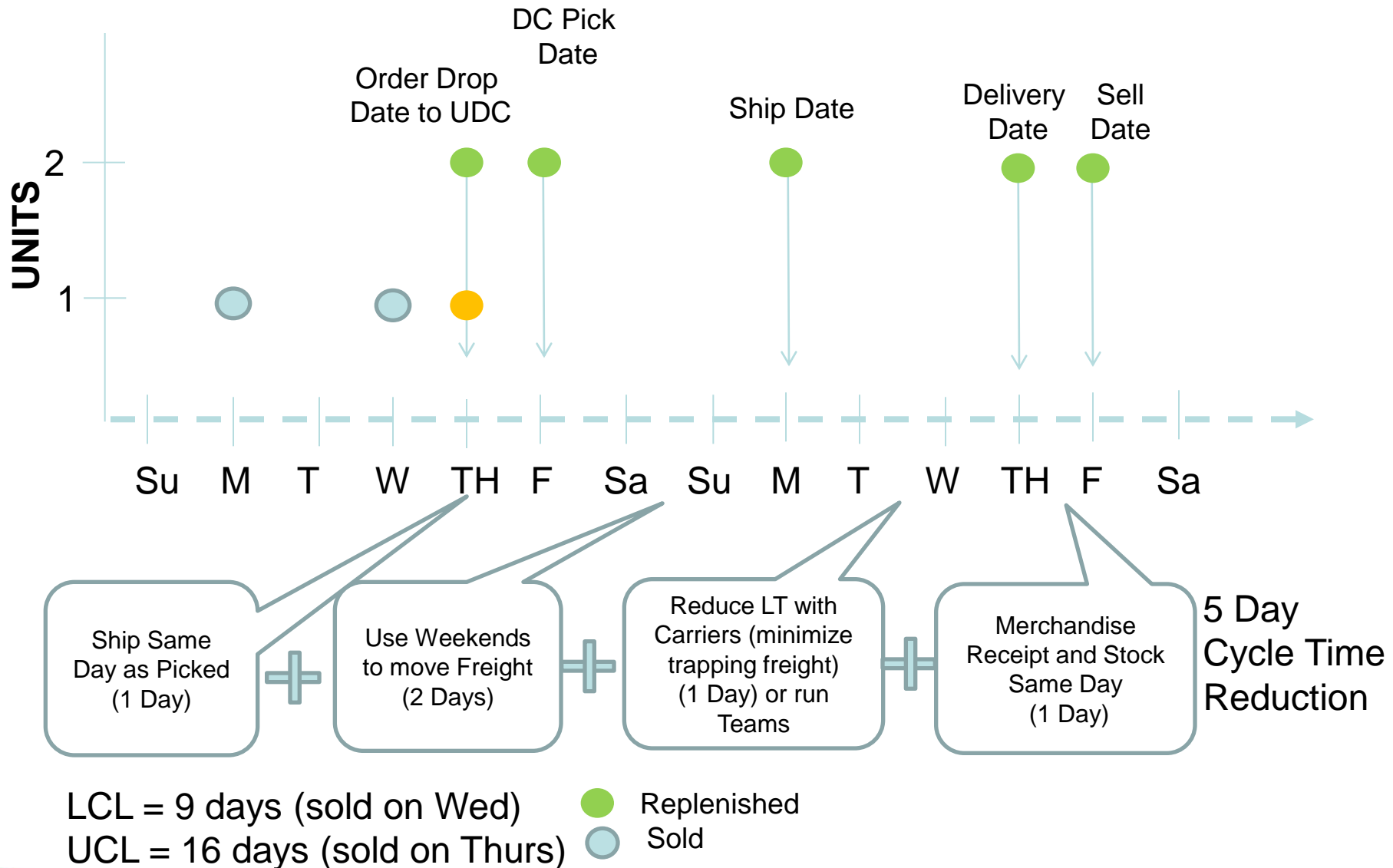
# What is a Multi-Echelon Network?



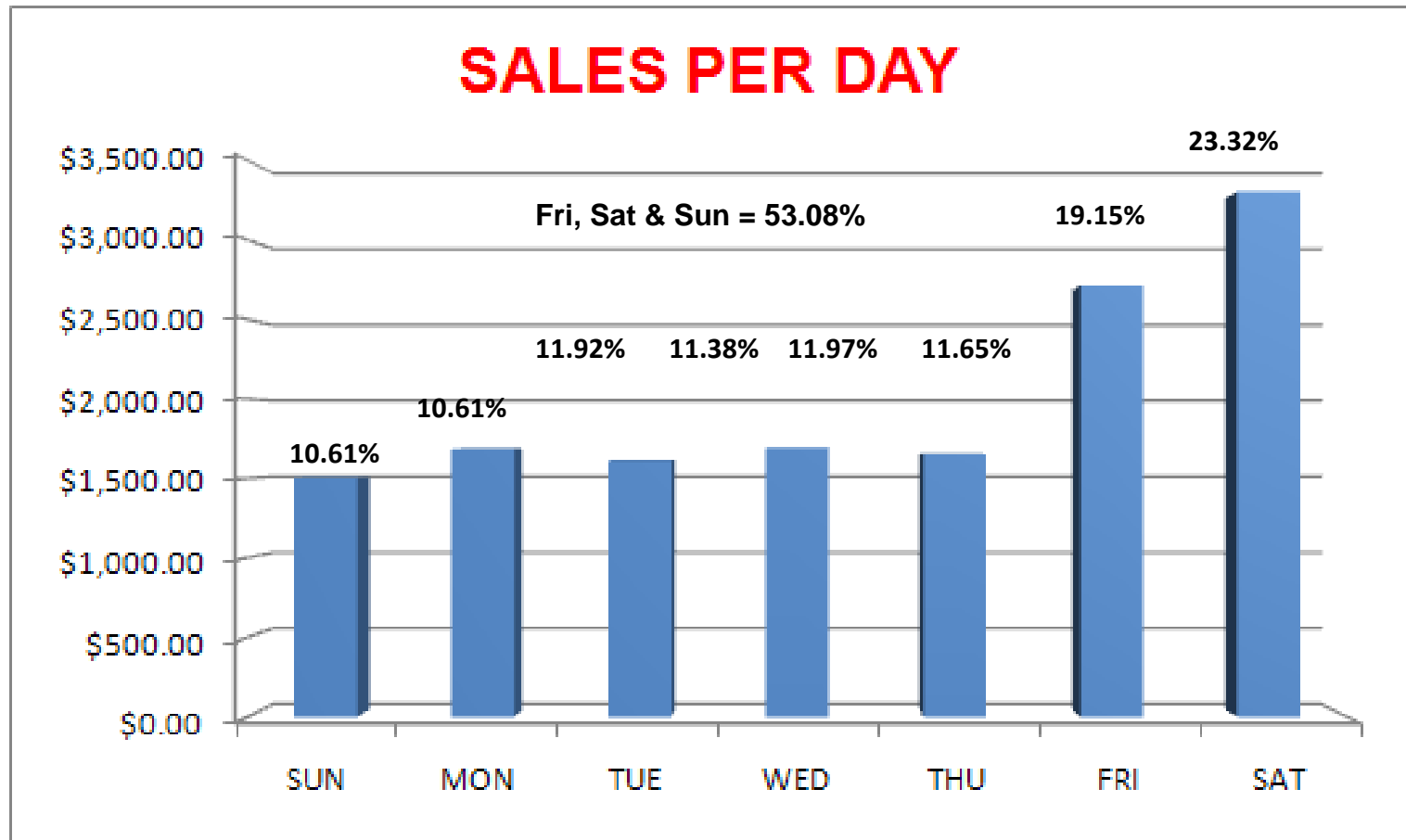
# Multi-Echelon (Hub & Spoke)



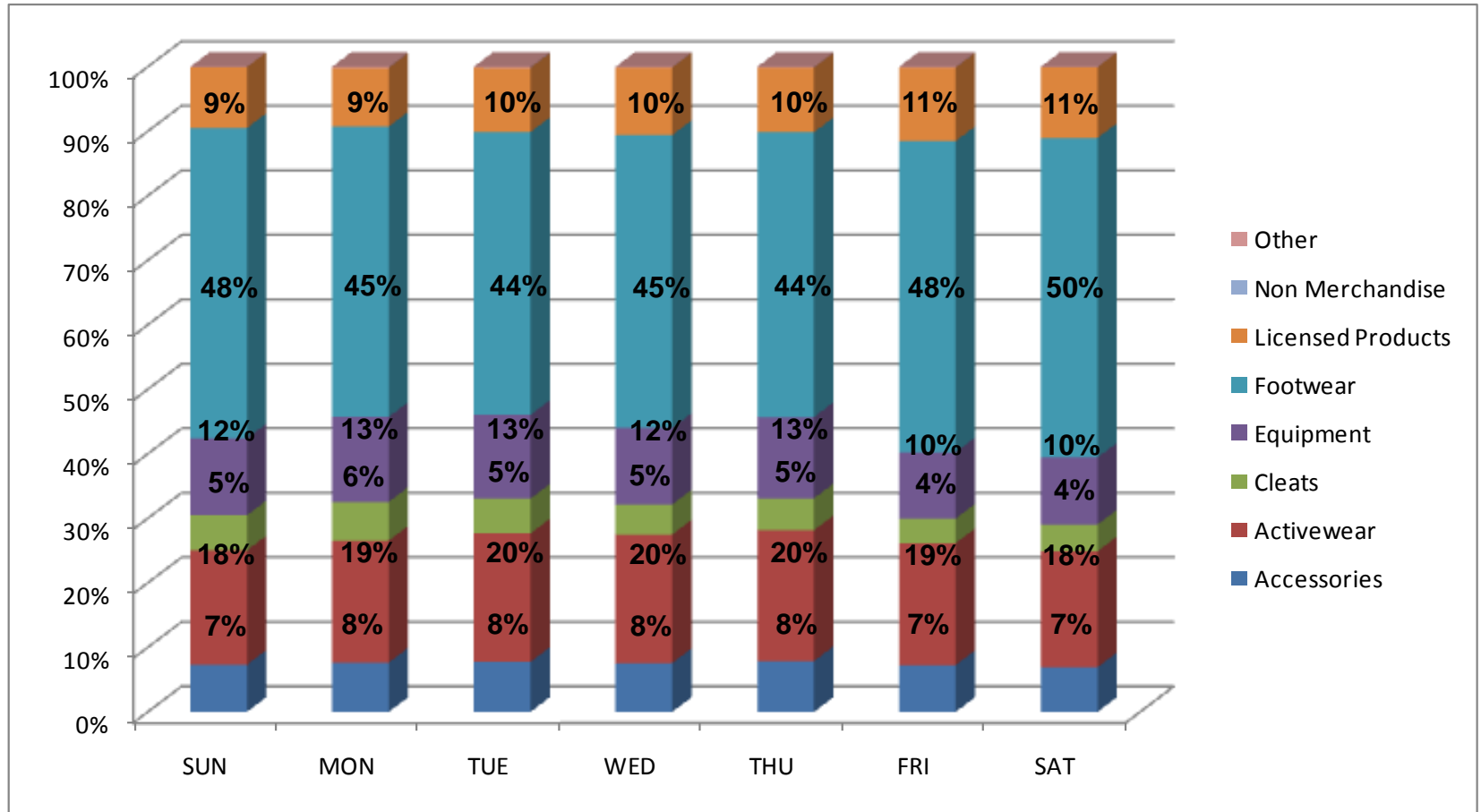
# Reaction or Replenishment Time



# Point of Sale (POS/Day)



# POS by Category/Department



West Coast Specialty Retailer

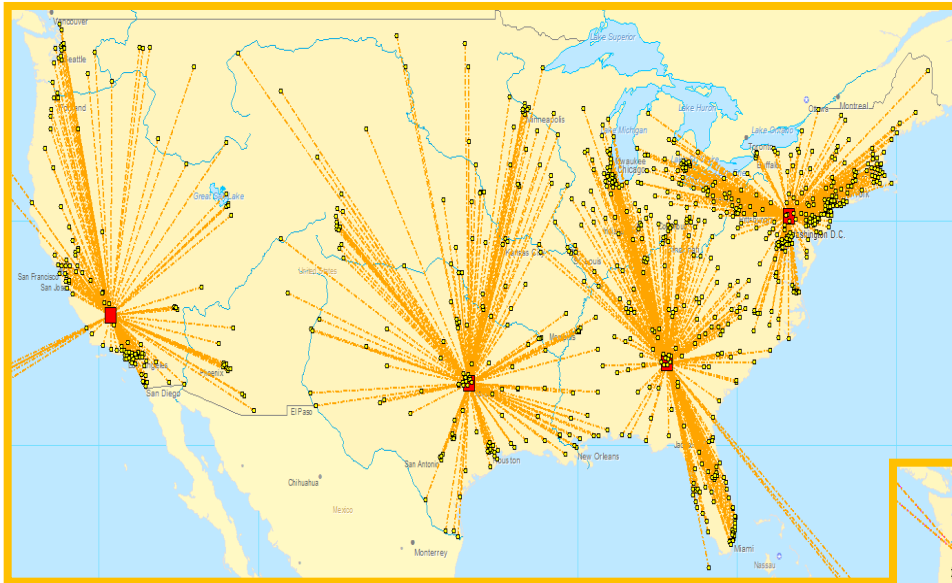
# What is our real goal?

- We believe it is getting the right SKU, to the right LOCATION, at the right TIME, and the right Quantity in order to drive the highest gross margin.....
- Our goal should be
  - In store stock %
  - Inventory Store Turns
  - Inventory Turn Over

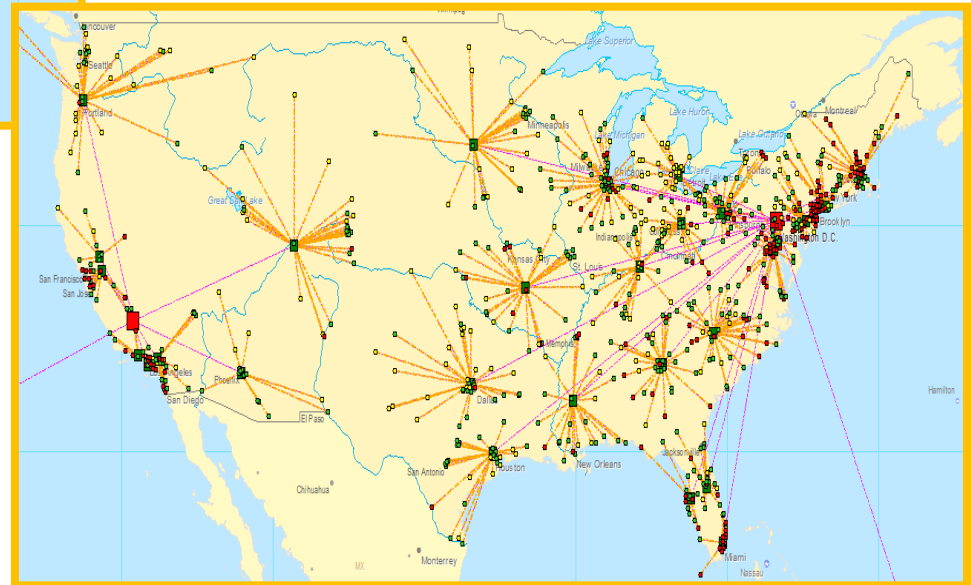
# Today's Agenda

Client Case Study	

# Case Study



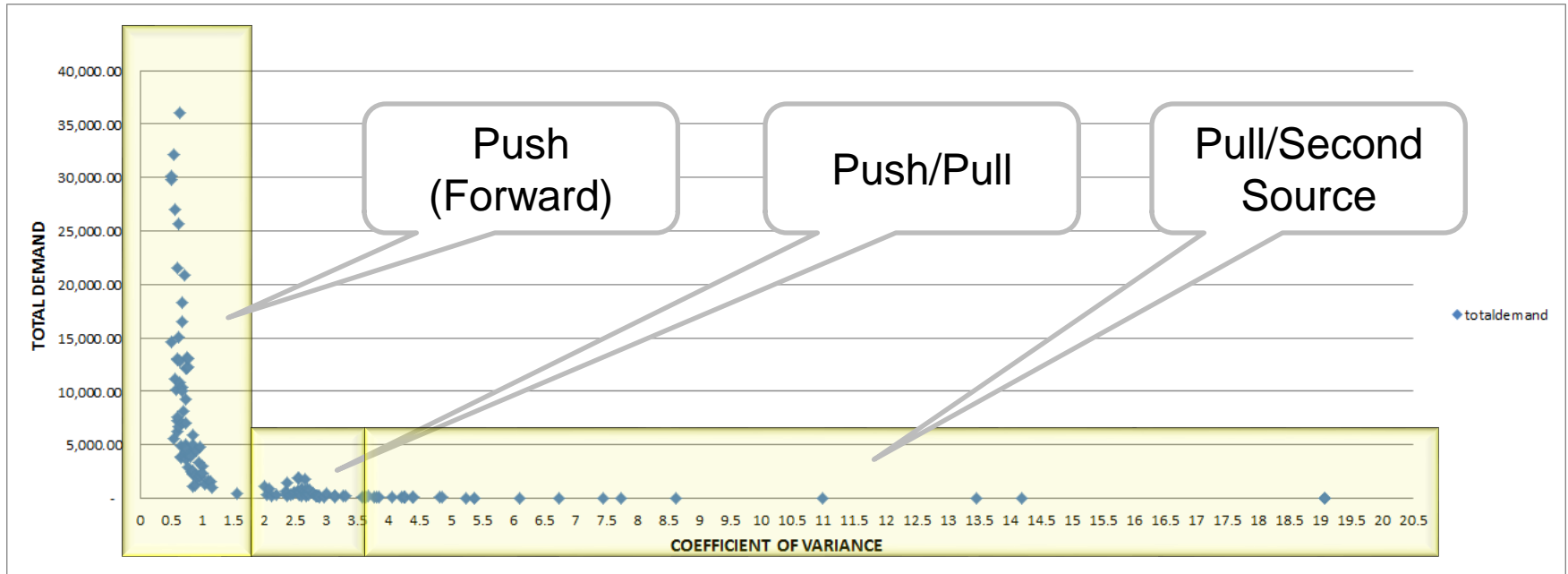
Current Network 2011



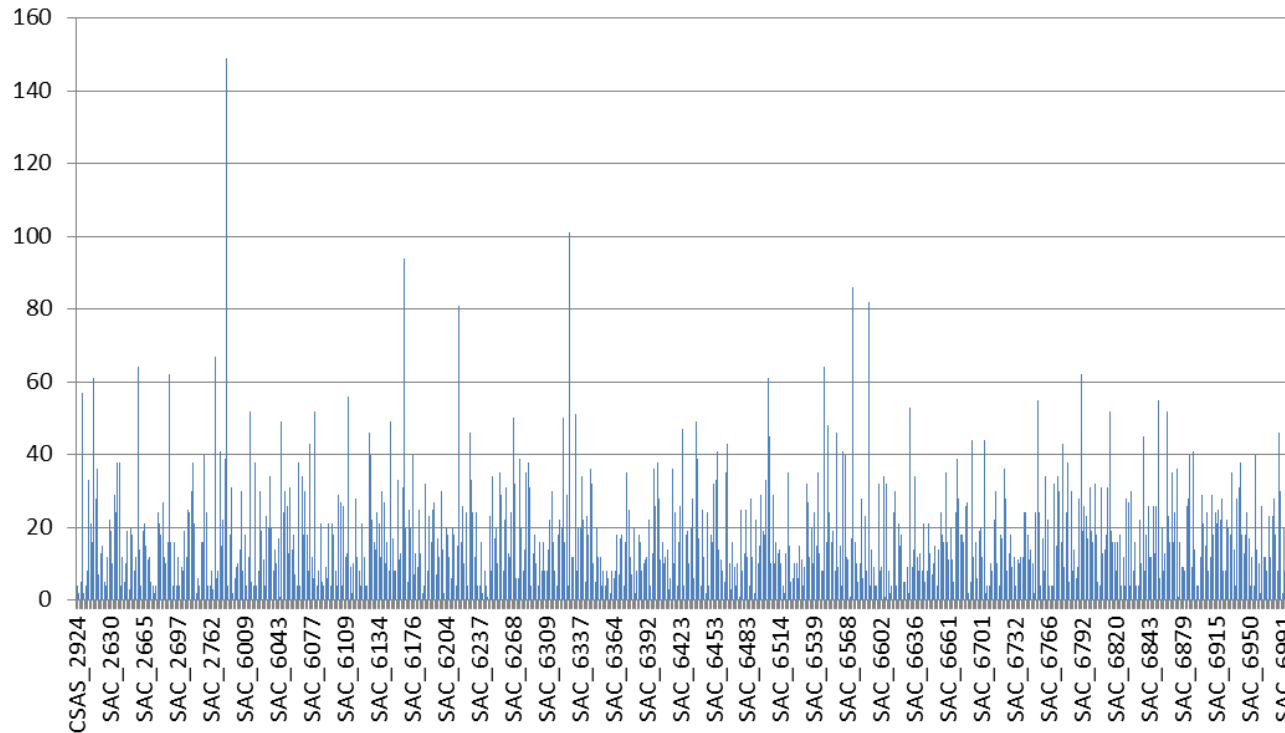
Proposed Network by 2013



# Understand COV



# Understand Variability

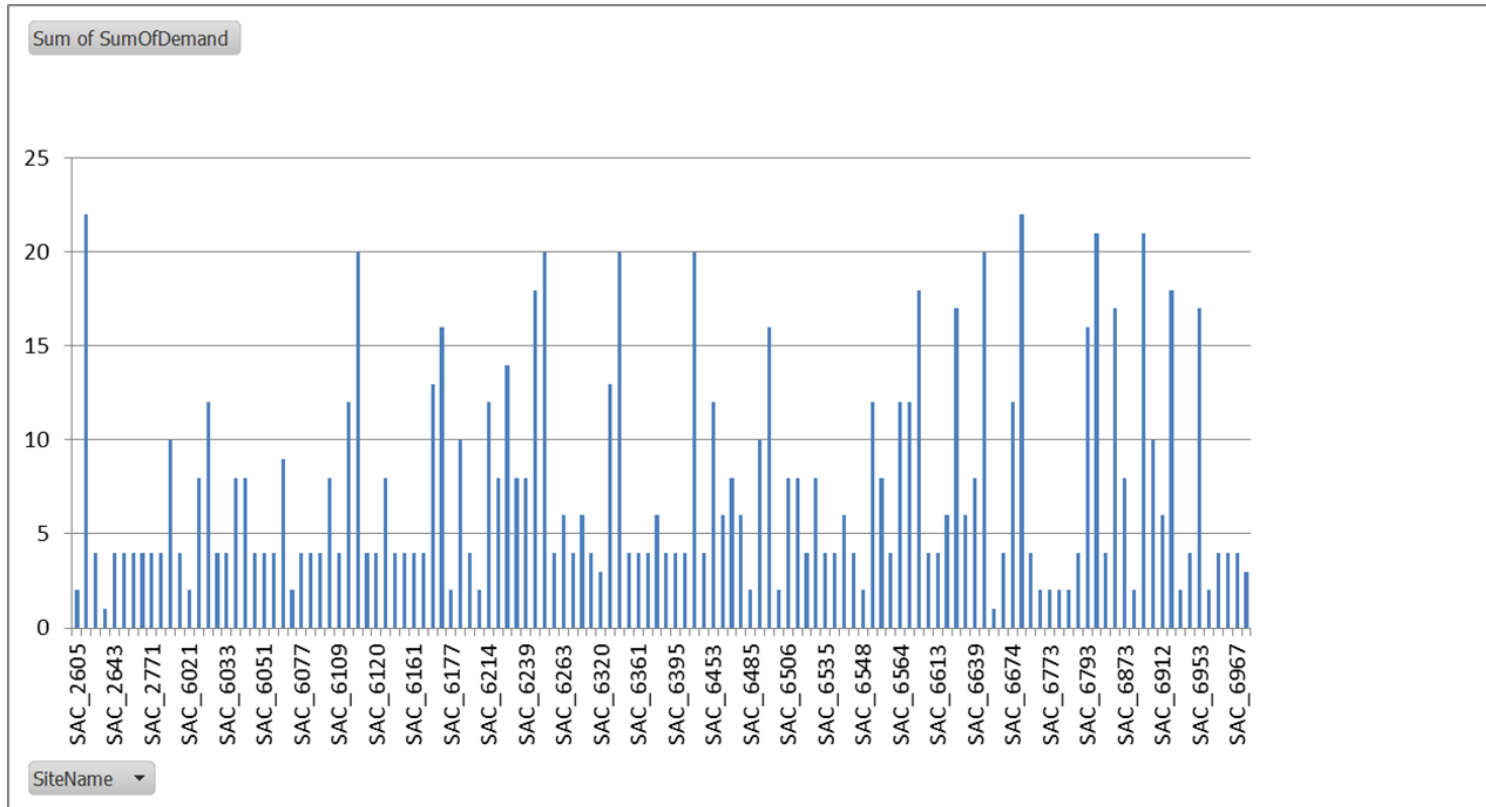


## High Volume – High Variability

724 / 834 (87%) of stores demand this product

92 / 834 (11%) of stores have only 1 sale all Year

# Understand Variability

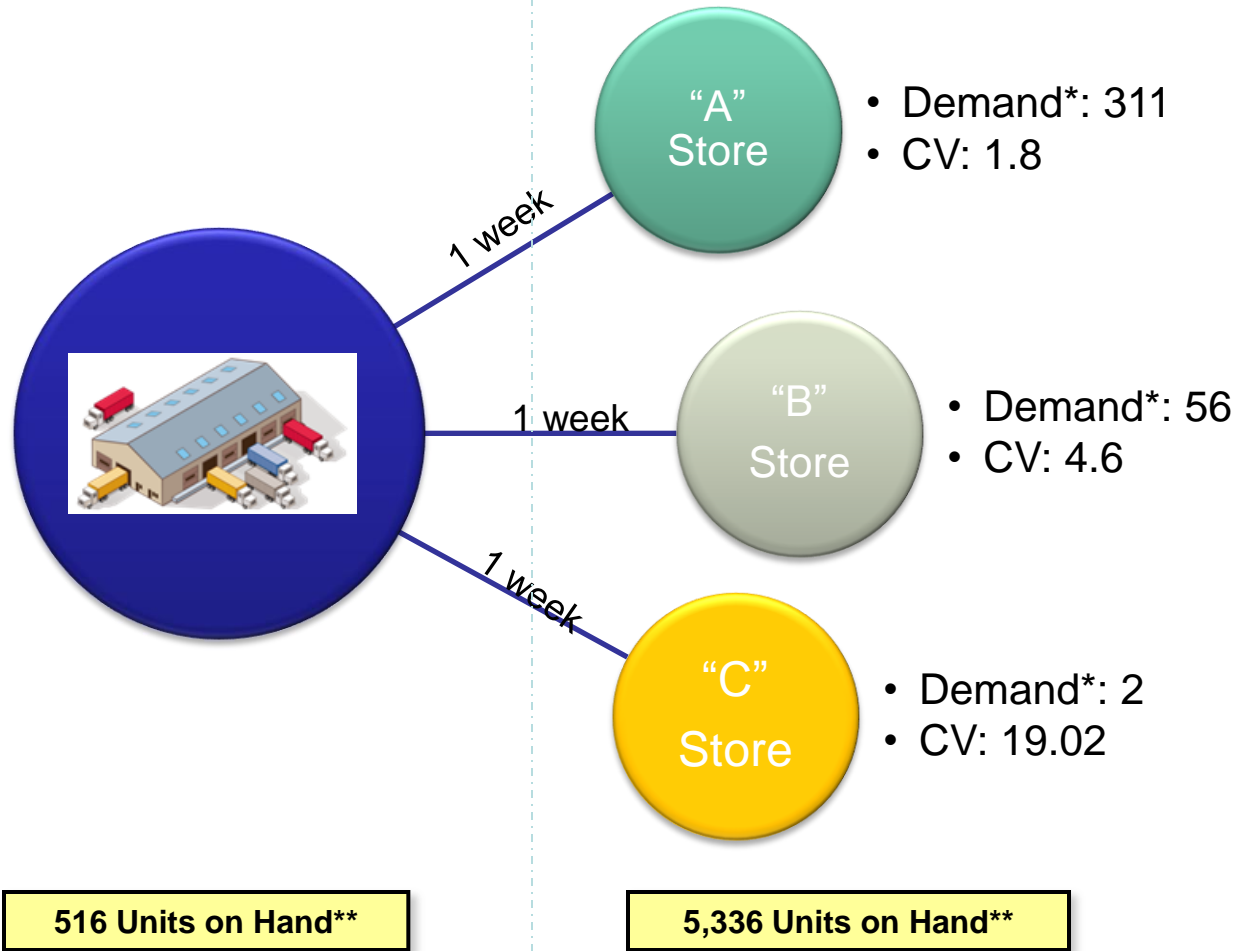


## Low Volume – High Variability

126 / 834 (15%) of stores demand this product

65 / 126 (52%) of stores only have 1 Sale all Year

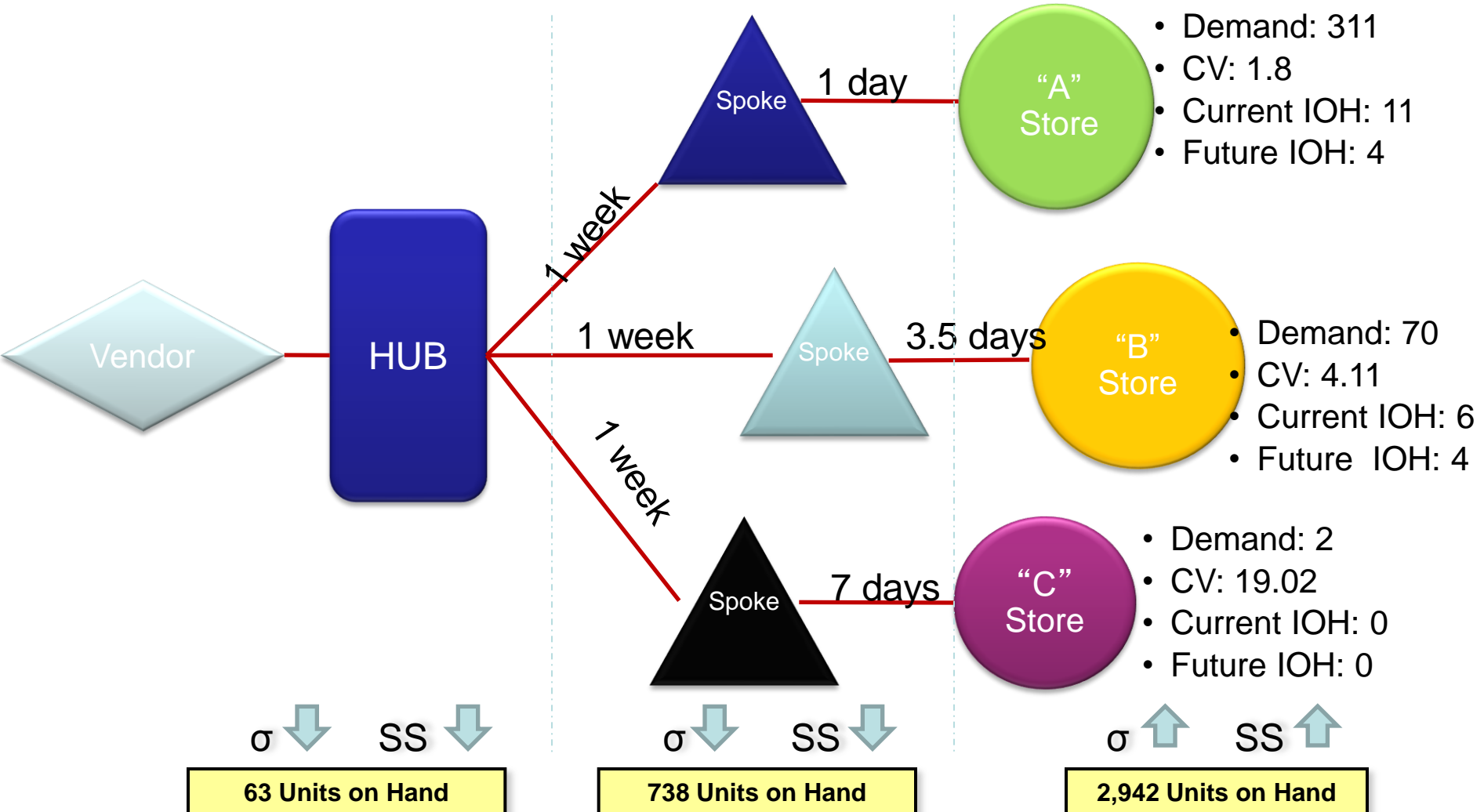
# Traditional Model (SKU A)



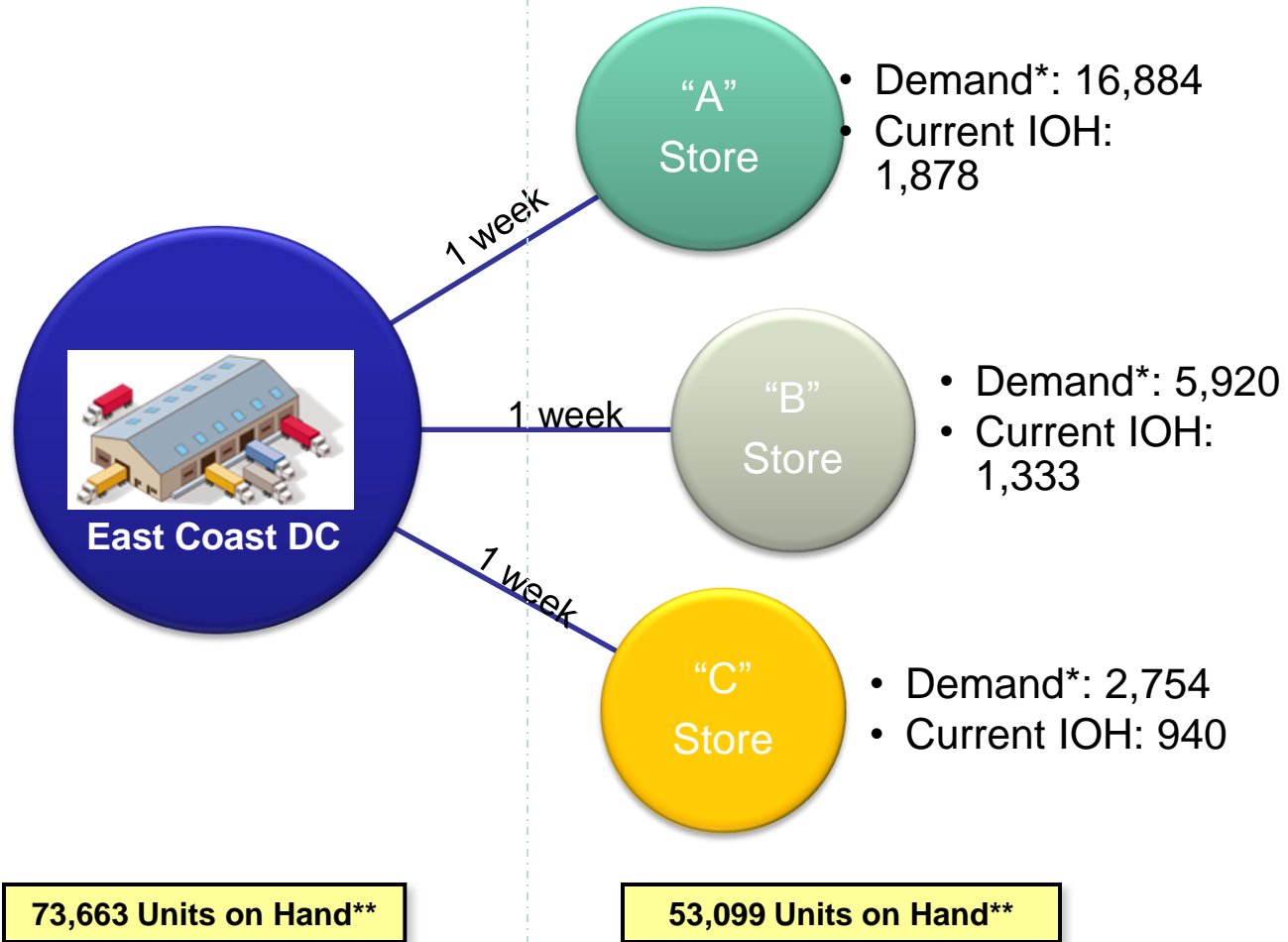
\* Sales units during FY2010

\*\* Inventory snapshot at DC as of 7/22 and Store as of 7.20 respectively.

# Multi-Echelon Network



# Macro View

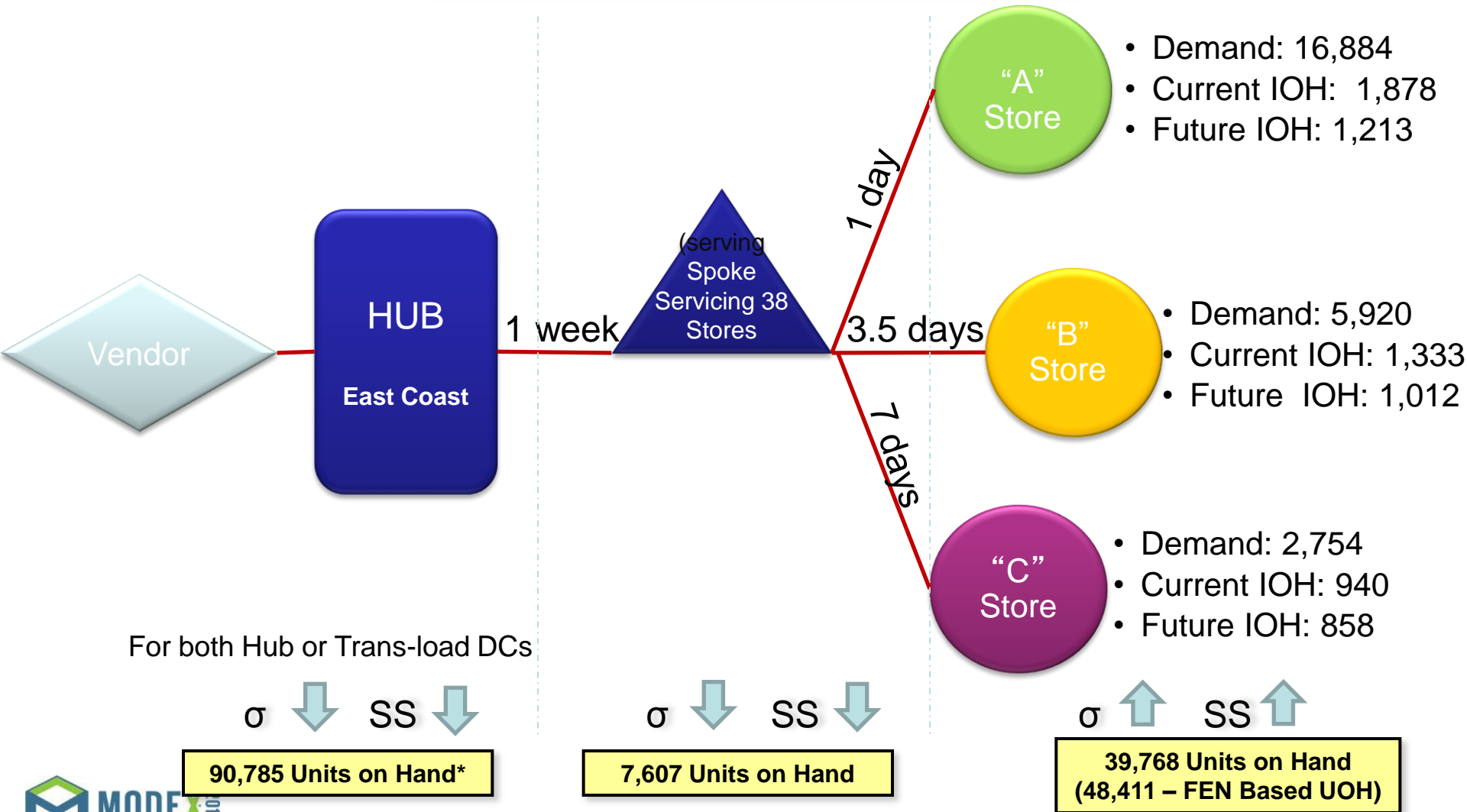


\* Sales units during FY2010

\*\* Inventory snapshot at DC as of 7/22 and Store as of 7.20 respectively.

# Safety Stock and Service

Sample Spoke: NY-NJ-CT

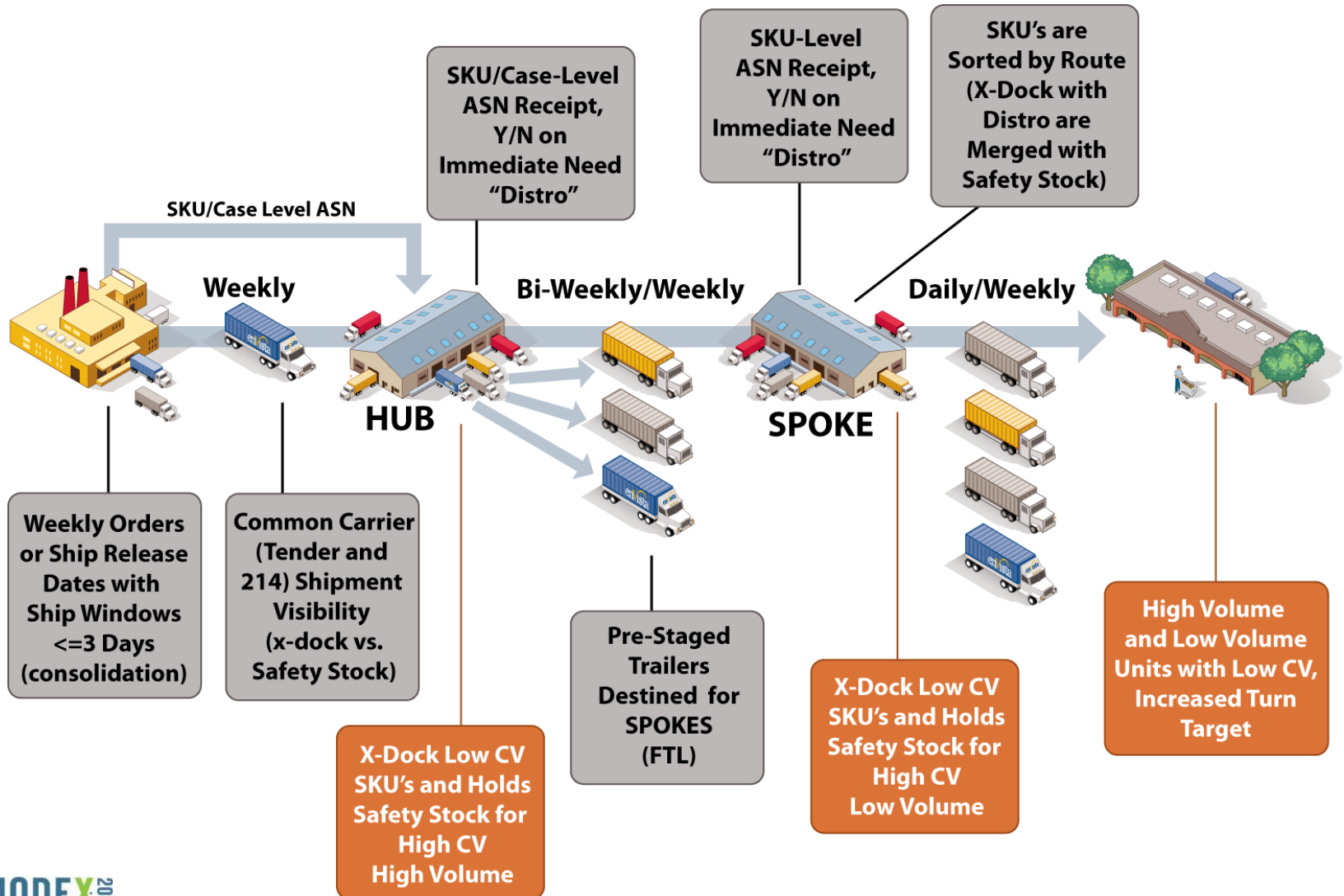


# Forecast Error

- 834 Total Stores x 627 Modeled SKUs = 522,918 possible SKU|Store Combinations
- 31 Spokes x 627 Modeled SKUs = 19,437 possible SKU|Store Combinations
- The Standard Deviation for many SKUs is higher than the mean (Intermittent Demand, similar to a spare parts business), therefore aggregating the forecast at the Spoke (closer to demand point) reduces the standard deviation and therefore reduces safety stock because of reduced store delivery time between demand and supply (Pull).



# Flow Through Model



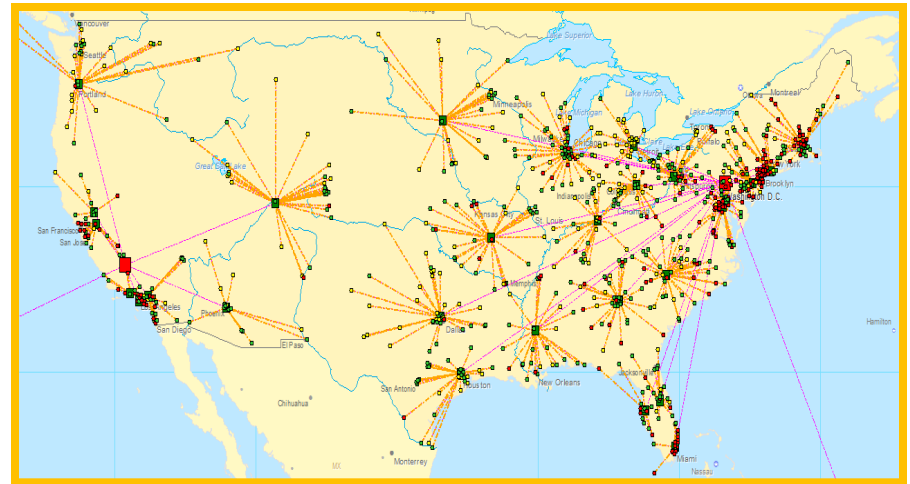
# What did Improve Service to the Stores Accomplish?



# Results from the ME Network

- One time inventory reduction of \$22.9M
- \$35.9M year over year reduction of inventory (5 years)
- Carrying Cost Reduction = \$2.75M
- Improved Store Inventory Turns = 5.92 from 3.58
- Improved Inventory Turn Over = 6.45 from 3.91 (improved cash flow)
- Proposed Increased Sales Uplift = \$43.8m over a two year period (based upon current H&S test model)

*January 2012 – January 2015*



Scenario	NPV	IRR
enVista H&S (no-lift)	\$4.6M	112%
enVista H&S (5%/2% AB Stores)	\$5.38M	134%
enVista H&S (12%/5% AB Stores)	\$7.2M	177.0%
H&S (no-lift)	\$1.0M	44.3%

# Today's Agenda

Recap	

# Recap

- Understand both Supply and Demand Variability (COV and STD)
- Define your push and pull boundaries
- Simulate if increased store deliveries has impact on service and comp sales
- Understand your reaction time
- Synchronized Supply with Demand
- Build and Organization Structure that is aligned with the flow of inventory

# Today's Agenda

Questions	



## ***For More Information:***

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