

# PRODUCT UPDATE & OUTLOOK

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**BLUEPRINT 2019**  
PLANNING FOR A FLEXIBLE FUTURE



# PRODUCT UPDATE

- Demand Classification & Seasonal Identification
- Intermittent Demand Forecasting
- Integrated Business Planning
- Auto Regressive Forecast Model
- Custom Groups

**BLUEPRINT 2019**  
PLANNING FOR A FLEXIBLE FUTURE



## BUSINESS PROBLEM

Users needed the software to reliably identify SKUs with seasonal demand and generate seasonal profiles.

## SOLUTION

- New engine that classifies demand
- Algorithmically identifies and confirms seasonality
- Applies scientific pattern matching
- Applies rigorous value add measurements

# ADVANCED SEASONALITY DCSI



# ADVANCED SEASONALITY DCSI

# ADVANCED SEASONALITY (DCSI)



## BUSINESS PROBLEM

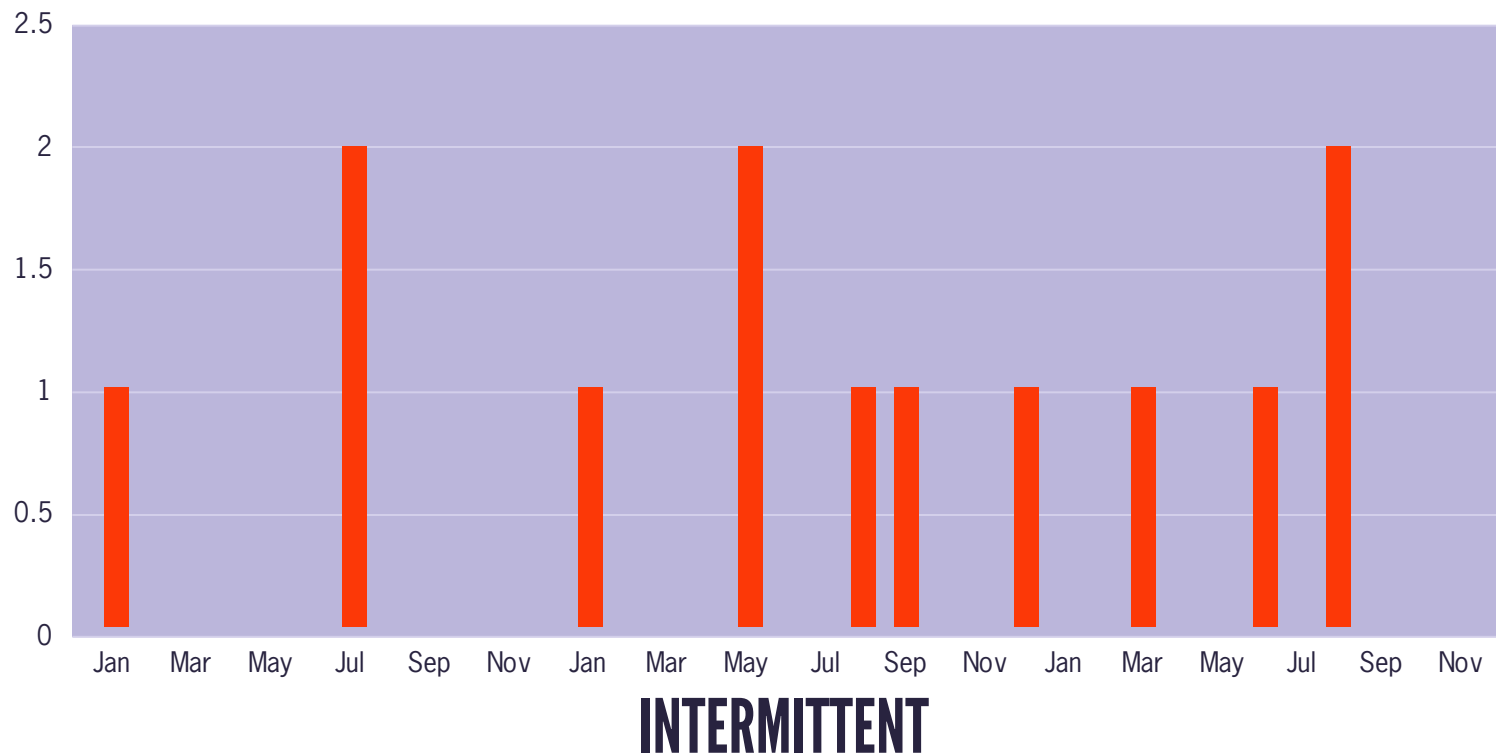
- There is a wide range of intermittent, slow, lumpy demand behavior
- SKUs with intermittent demand are difficult to forecast with standard smoothing models
- For optimal forecasting efficiency users need dedicated forecast strategies for intermittent demand SKUs

## SOLUTION

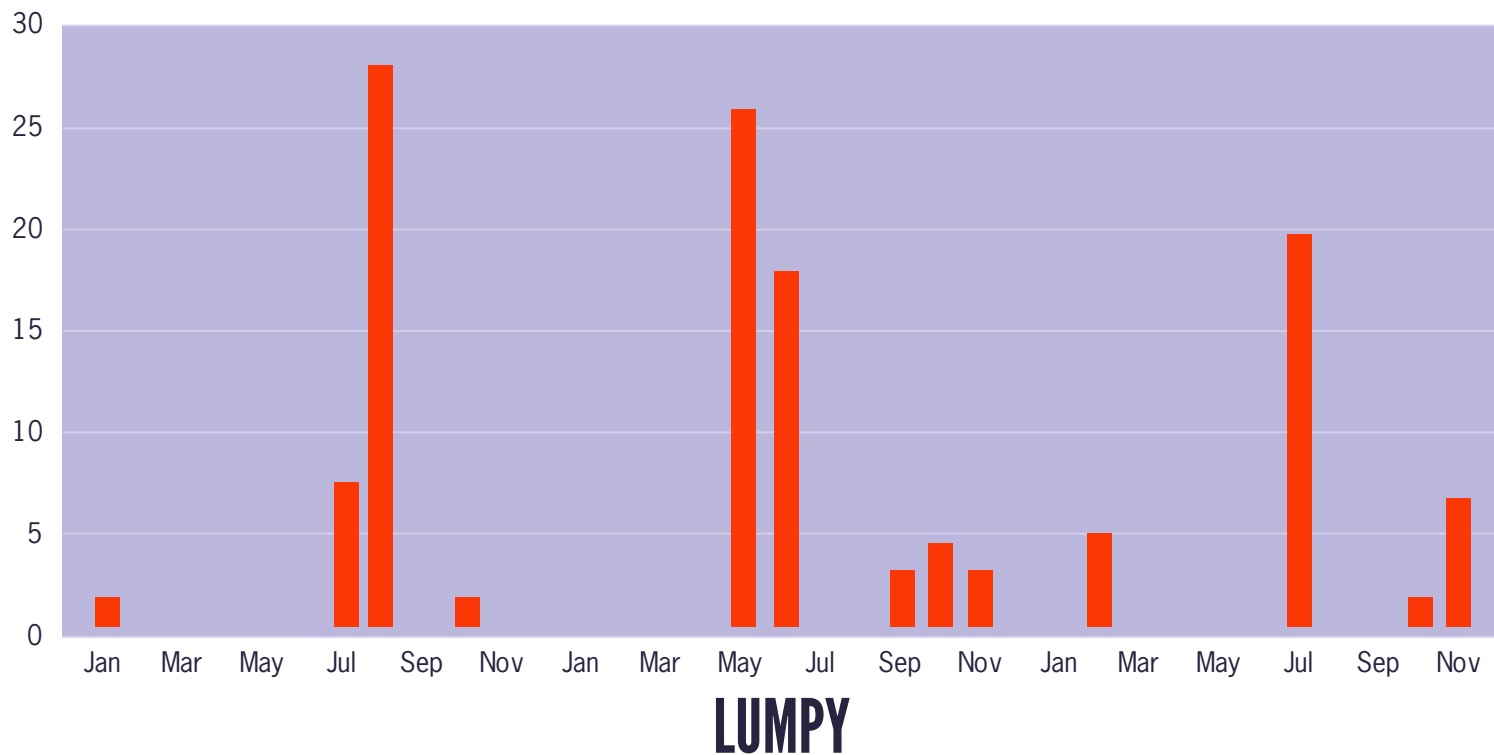
- New forecast models dedicated to intermittent demand have been added
- New models will use the demand classifications that identified the various segments of SKUs with intermittent demand

# INTERMITTENT DEMAND FORECAST

# INTERMITTENT, LUMPY, SLOW MOVING



# INTERMITTENT, LUMPY, SLOW MOVING





## BUSINESS PROBLEM

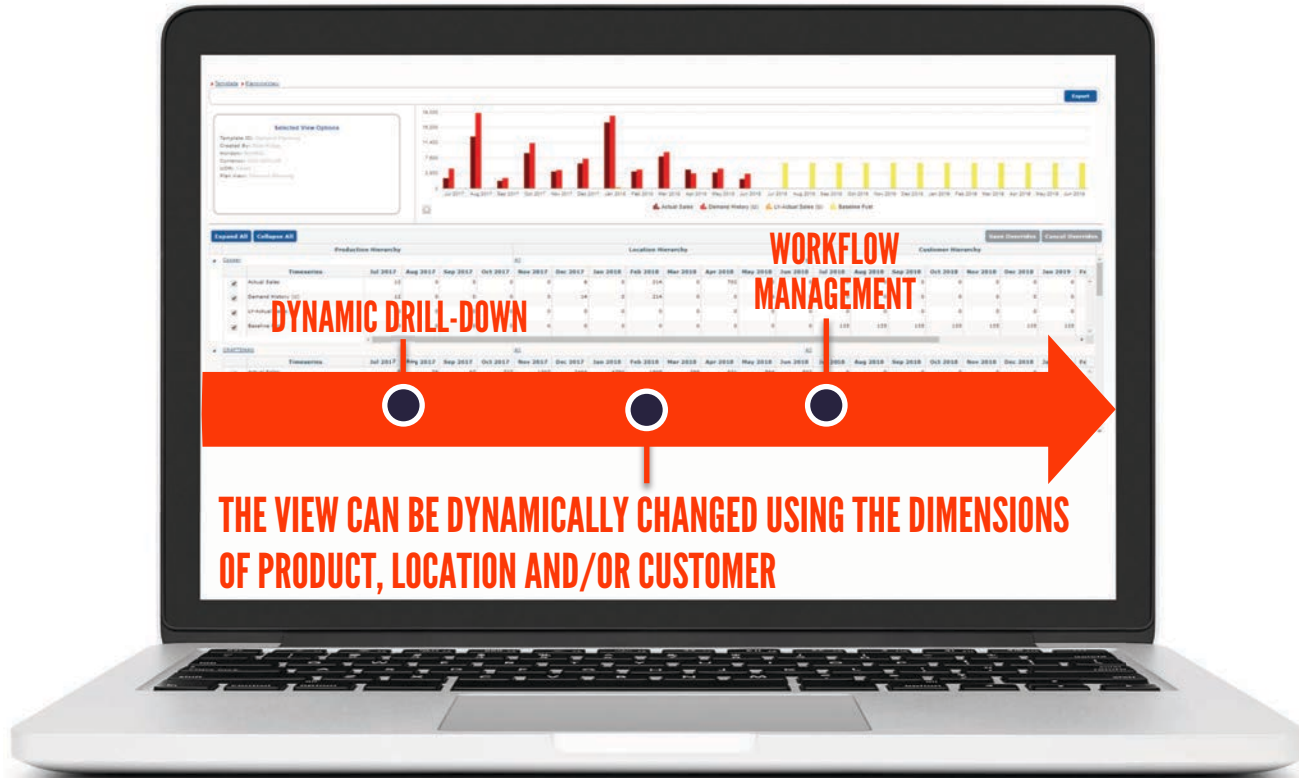
Enterprises need to collaborate on their overall plan for sales, inventory, operations and how those plans reconcile to the company financial plan. Clients also need to expand that aggregate planning exercise to include suppliers.

## SOLUTION

- Enable new plan views that can use any time-series of data summarized across time to the desired aggregation.

# INTEGRATED BUSINESS PLANNING

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## BUSINESS PROBLEM

Enterprises need additional forecast models for continuous selling SKUs that provide better forecast accuracy depending on multiple demand attributes and behavior.

## SOLUTION

- We have added new sophistication in our demand forecast offering with auto regressive forecasting that can produce better forecast accuracy for certain segments of SKUs.
- Part of the Auto Select forecasting process

# AUTO REGRESSIVE FORECASTING

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A  $p$ th-order autoregressive model, or  $AR(p)$ , takes the form:

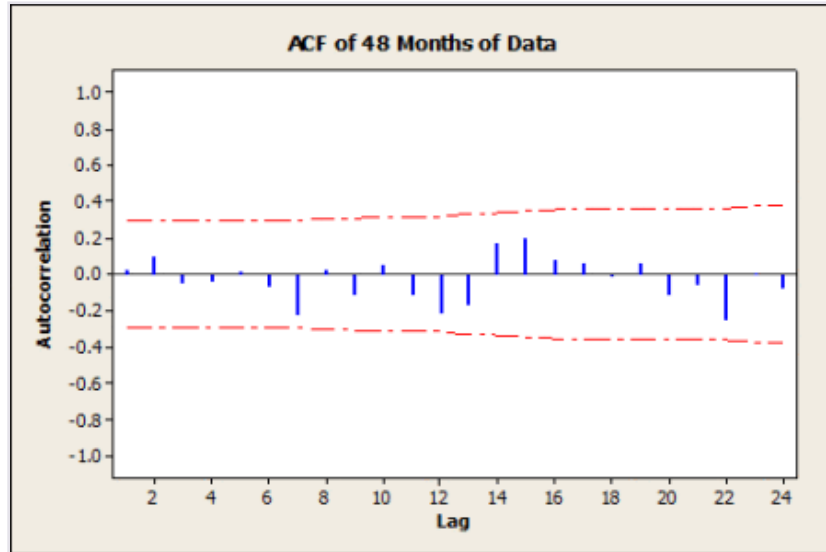
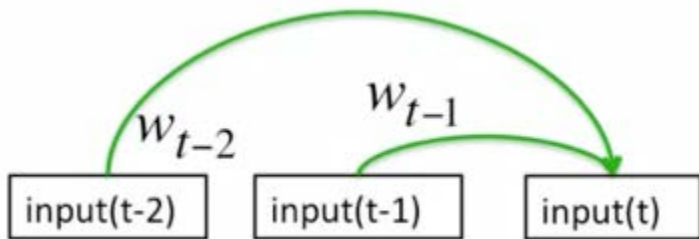
$$Y_t = \phi_0 + \phi_1 Y_{t-1} + \phi_2 Y_{t-2} + \dots + \phi_p Y_{t-p} + \varepsilon_t$$

$Y_t$  = response variable at time  $t$

$Y_{t-k}$  = observation (predictor variable) at time  $t-k$

$\phi_i$  = regression coefficients to be estimated

$\varepsilon_t$  = error term at time  $t$



## BUSINESS PROBLEM

Need the ability to create custom groups of locations/items that can be used in filters to make maintenance easier

## SOLUTION

- Create custom groups of locations/items that can be selected in list
- Custom groups to select items for deals and events, mass maintenance jobs and so on
- Custom groups and the associated members of the group can be manually typed in, selected from a list, or quickly copied and pasted from another application such as Excel™
- Can be saved for re-use, or made public to be shared/copied, and only the creator can edit

# CUSTOM GROUPS

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**Group**

Group Name:  Group Description:  Group Type:

Public: ☒ Created By:

**Sub Groups**

Name	Description	Location(s)	Edit	Delete
NW	Northwest	28	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
SW	Southwest	24	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

**Sub Group Details**

Name:  Description:

**Filter Locations**

Type/Copy-Paste: ☒ New Line ☐ Tab Separated ☐ Comma Separated

Please type or copy and paste data in 'New Line' format

e.g AAA  
BBB  
CCC

Unassigned: 153, 158, 161, 162, 163

Assigned: 156, 157, 129, 159, 165

Type of  
Group:  
Item or  
Location

Enter or  
Copy/Paste

Assign Items  
or Locations

# CUSTOM GROUPS

**BLUE RIDGE**

Dashboard Daily Tasks Advanced Tasks Administration

> Item List

List Filtered By: Item Description (cucumber)

	Item ID	Description	Supplier ID	Ship Point	Location	Activity Code	Velocity Code	Buyer	Forecast Method	Sub-Category Code	USD 16:	Products.comm-class-name:	USD 2:
	00014420	CUCUMBER, TINY VEG	01	Special Order	02	N							
	00014420	CUCUMBER, TINY VEG	0030494	Default	01	N							
	00015838	WATER, CUCUMBER SELTZER CAN	0065325	Default	01	D							
	00029128	CUCUMBERS, 36 CT HABIT	0043053	Default	02	1							
	00029128	CUCUMBERS, 36 CT HABIT	0043053	Default	01	1							
	00013869	CUCUMBER, ORG 30-40 CT	0043077	Organics	01	N							
	00013869	CUCUMBER, ORG 30-40 CT	0043077	Default	02	N							
	00017938	SYRUP, CUCUMBER	0045235	Default	02	N							
	00017938	SYRUP, CUCUMBER	0045235	Default	01	N							
	00019072	SYRUP, CUCUMBER ORG	0026960	Stocked DRY GOODS	01	A							
	00019072	SYRUP, CUCUMBER ORG	0026960	Stocked DRY GOODS	02	N							
	00023525	AIR FRESHENER, CUCUMBER MELON	0050050	R3 special	01	A							
	00023525	AIR FRESHENER, CUCUMBER MELON	0050050	Default	02	N							
	00024942	AIR FRESHENER, ZEPHAIR CITRUS CUCUMBER	0028200	Default	01	N							
	00024942	AIR FRESHENER, ZEPHAIR CITRUS CUCUMBER	01	Special Order	02	N							
	00027099	HERB, TINY VEGGIES CUCUMBER W/ FLOWER	01	Special Order	02	N							
	00027099	HERB, TINY VEGGIES CUCUMBER W/ FLOWER	0030494	Default	01	N							
	00033382	SYRUP, CUCUMBER CITRUS FTN	01	Special Order	02	N							
	00033382	SYRUP, CUCUMBER CITRUS FTN	1002660	Default	01	A							
	00188111	WATER, V8 CUCUMBER LIME INFUSED	0025267	Default	01	1							
	00188111	WATER, V8 CUCUMBER LIME INFUSED	01	Special Order	02	1							
	00197124	PRETZEL, THINS CUCUMBER DILL	0014715	Default	01	N							
	00197124	PRETZEL, THINS CUCUMBER DILL	01	Special Order	02	N							
	00263058	SODA, CUCUMBER NAT	0065325	Default	01	A							
	00263058	SODA, CUCUMBER NAT	01	Special Order	02	N							
	00510204	DRESSING, CUCUMBER WASABI	0039558	Default	01	N							
	00510204	DRESSING, CUCUMBER WASABI	0039558	Default	02	N							
	00510822	DRESSING, CUCUMBER CREAMY	0039558	Default	01	N							
	00510822	DRESSING, CUCUMBER CREAMY	0039558	Default	02	N							
	00547570	SAUCE, CUCUMBER TZATZIKI	0033061	Default	01	A							
	00547570	SAUCE, CUCUMBER TZATZIKI	01	Pamela Martin	02	A							
	00892124	CUCUMBER, 24 CT	0022872	Default	01	A							
	00892124	CUCUMBER, 24 CT	01	Special Order	02	N							
	00896234	CUCUMBER, REG SEL CONTRACT	0043057	Default	01	A							
	00896234	CUCUMBER, REG SEL CONTRACT	0043057	Default	02	A							

Page 1 of 2 50 Items per page

### Item List Filters

Supplier Name:

Supplier Setup: All

Supplier ID: All Suppliers

Ship Point: All Ship Points

Location: All Locations

Item ID:

Item Description: cucumber

**Item Custom Group:**

**Location Custom Group:**

Activity Code:

Velocity Code: All Velocity Classes

Buyer: All Buyers

Forecast Method: All Forecast Methods

Sub-Category Code:

USD 16:

Products.comm-class-name:

USD 2:

Apply Filters Clear Filters Close

User: rod.daugherty System Name: System Date: 2/26/2019 5:58:02 AM - Logout

Item List

Export View

Final Probability	Selling Unit Cost	Units On Hand	Units On Order	Velocity Code		
		0.00	0.00	N		
5.00		0.00	0.00	N		
		4.00	0.00	N		
		0.00	0.00	N		
		0.00	0.00	N		
1.37		4.00	5.00	N		
		0.00	0.00	N		
		0.00	1.00	N		
		5.00	0.00	N		
		0.00	0.00	N		
		19.00	0.00	N		
		0.00	0.00	N		
		0.00	0.00	N		
		0.00	0.00	N		
		108.00	0.00	N		
5.00		0.00	0.00	N		
3.00		0.00	0.00	D		
4.35		4.00	0.00	C		
4.75		0.00	0.00	C		
5.00		0.00	0.00	C		
		0.00	0.00	N		
		0.00	0.00	N		
1.54		37.00	30.00	B		
1.42		4.75	0.00	B		
1.37		19.00	152.00	N		
		0.00	0.00	N		
1.25		33.00	56.00	N		
1.25		7.00	14.00	N		

1 - 50 of 72 Items

# PRODUCT OUTLOOK

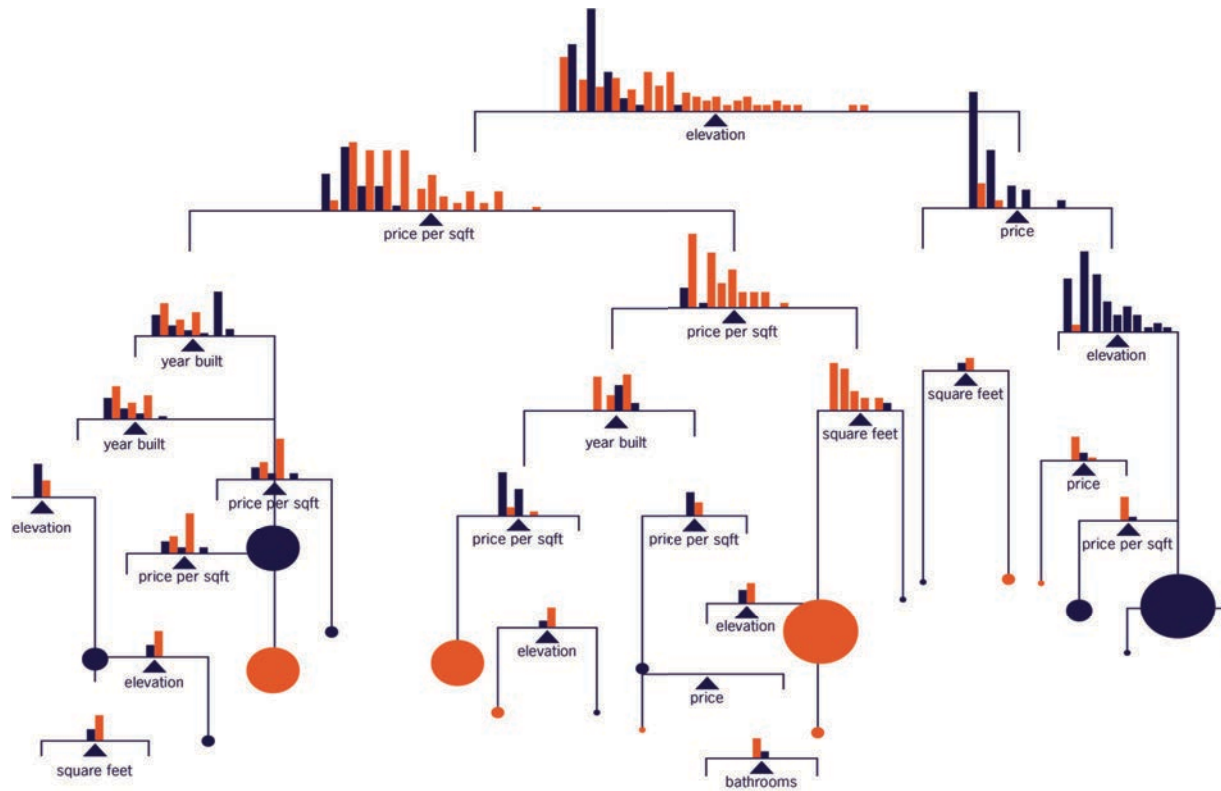
- Artificial Intelligence
  - Predictive Analytics / CSIS
  - Price Elasticity Forecast Model
  - Neural Network
- Top Down Forecasting
- Promotion Management
- Location Modeling
- Customer Requested Enhancements



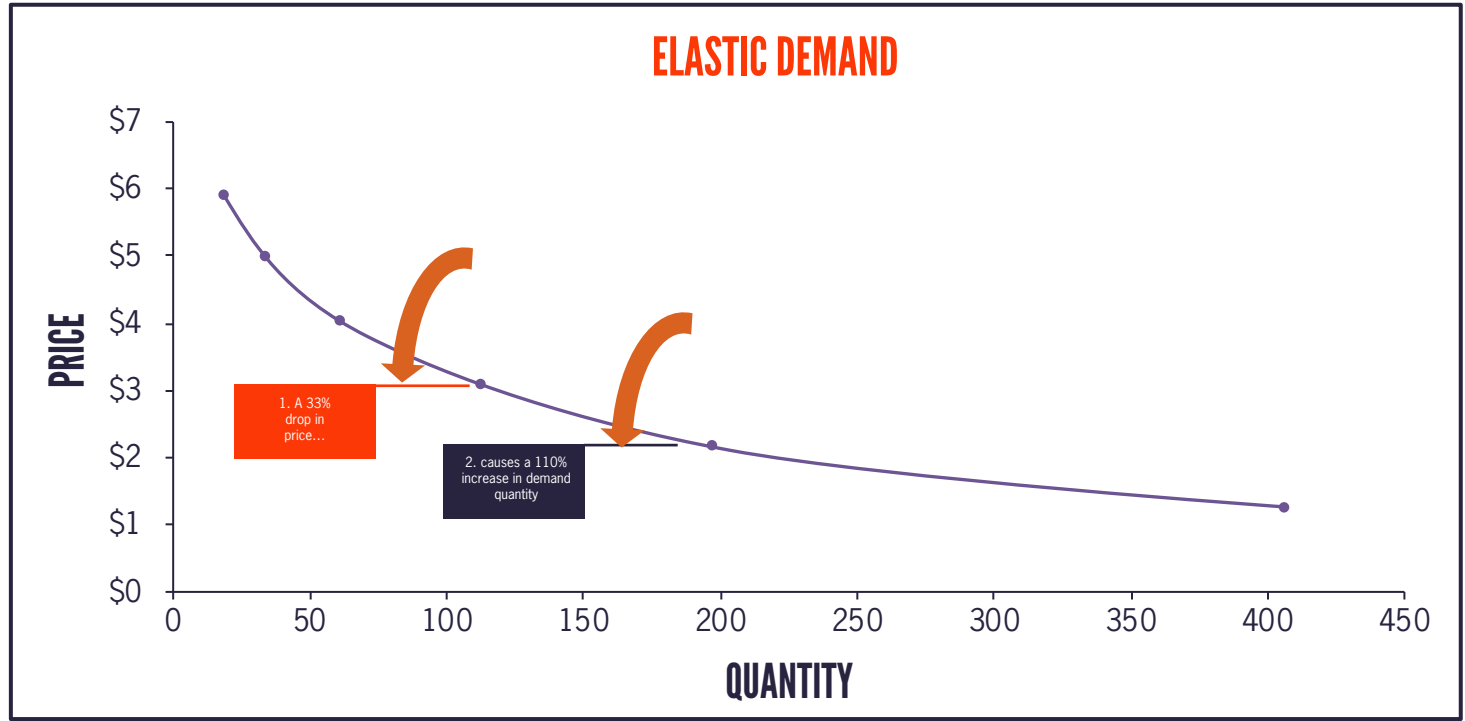




# ARTIFICIAL INTELLIGENCE



# NEURAL NETWORK



# PRICE ELASTICITY

# AGGREGATE DEMAND / TOP DOWN FORECASTING

ITEM/LOCATION	PERIOD 1	PERIOD 2	PERIOD 3	PERIOD 4	PERIOD 5	PERIOD 6	PERIOD 7
Item #1	3	1	0	0	2	0	1

# AGGREGATE DEMAND / TOP DOWN FORECASTING

ITEM/LOCATION		PERIOD 1	PERIOD 2	PERIOD 3	PERIOD 4	PERIOD 5	PERIOD 6	PERIOD 7
Item #1		3	1	0	0	2	0	1
CATEGORY/LOCATION		9	1	2	4	6	5	4
CAT. A	Item #1	3	1	0	0	2	0	1
	Item #2	2	0	0	1	4	3	2
	Item #3	4	0	2	3	0	2	1

# AGGREGATE DEMAND / TOP DOWN FORECASTING

ITEM/LOCATION		PERIOD 1	PERIOD 2	PERIOD 3	PERIOD 4	PERIOD 5	PERIOD 6	PERIOD 7
Item #1		3	1	0	0	2	0	1
CATEGORY/LOCATION		9	1	2	4	6	5	4
CAT. A	Item #1	3	1	0	0	2	0	1
	Item #2	2	0	0	1	4	3	2
	Item #3	4	0	2	3	0	2	1
DEPARTMENT/LOCATION		16	12	10	15	13	10	8
Dept. I	Cat. A	9	1	2	4	6	5	4
	Cat. B	4	6	3	7	4	3	0
	Cat. C	3	5	5	4	3	2	4

## FORECAST ERROR

Item/Location

2.1%

Category/Location

1.6%

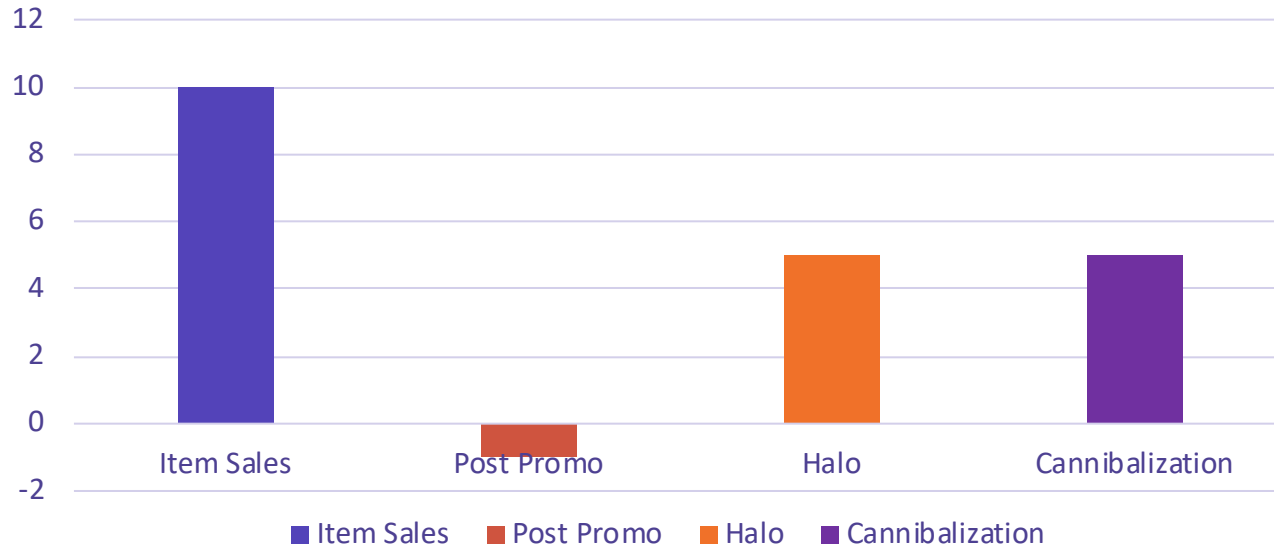
Department/Location

4.5%

**SELECT THE LEVEL WITH LOWEST  
FORECAST ERROR**

# AGGREGATE DEMAND / TOP DOWN FORECASTING

## OVERALL PROMOTION BREAKDOWN



# PROMOTION MANAGEMENT





# LOCATION MODELING



## LAST 12 MONTHS

- Over 50 customer requested enhancements added

## PRODUCT COUNCIL

- Wrapped up end of Q1
- Some priorities will go into Q3 releases

## Q2 2019

- 15+ customer requested enhancements planned for Q2



# CUSTOMER REQUESTS

# CUSTOMER REQUESTS PLANNED FOR Q2

<b>Event Flow</b>	Enable “flow” of event goods with regular replenishment over course of event
<b>Dashboard Item Alert Lists</b>	Enable the item alert lists on the Dashboard to be saved by user
<b>Order Item Detail</b>	Improvements to Order Item Detail including adding Hold Out Name
<b>Dashboard Filter</b>	Add Item Groups to the Dashboard Filter for Demand Exceptions and Item Alert Categories



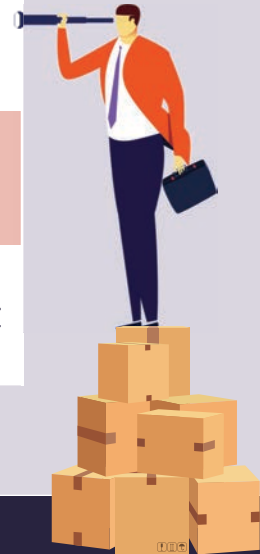
# CUSTOMER REQUESTS PLANNED FOR Q2

<b>Open Order Items List</b>	Adding User Defined fields to Open Order Items List and Open Order
<b>Out Before Delivery</b>	Enable Out Before Delivery flag as part of Open Items List filter
<b>Deal Manager</b>	Add columns to illustrate the original price vs discount or increase
<b>Item List Columns</b>	Addition of multiple new column choices on the Item List
<b>Simulated Profile</b>	Add link to Item Forecast page from Simulated Profile page



# CUSTOMER REQUESTS PLANNED FOR Q2

<b>Maximum Cap Demand</b>	Add logic to place a maximum cap on demand when out of stock and using calculated lost sales
<b>Forecast Frequency</b>	Add Forecast Frequency to Mass Maintenance query filter
<b>Configure Decimal Places</b>	Enable define decimal places on order summary item list, i.e. safety stock units column
<b>Freeze Forecast</b>	Add Frozen Forecast information as column choices for the Item List



# THANK YOU



**BLUE RIDGE**  
FOR A MORE FORESEEABLE FUTURE