PRODUCT UPDATE & OUTLOOK

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BLUEPRINT 2●19
PLANNING FOR A FLEXIBLE FUTURE

PRODUCT UPDATE

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

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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

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ADVANCED SEASONALITY DCSI

ADVANCED SEASONALITY (DCSI)
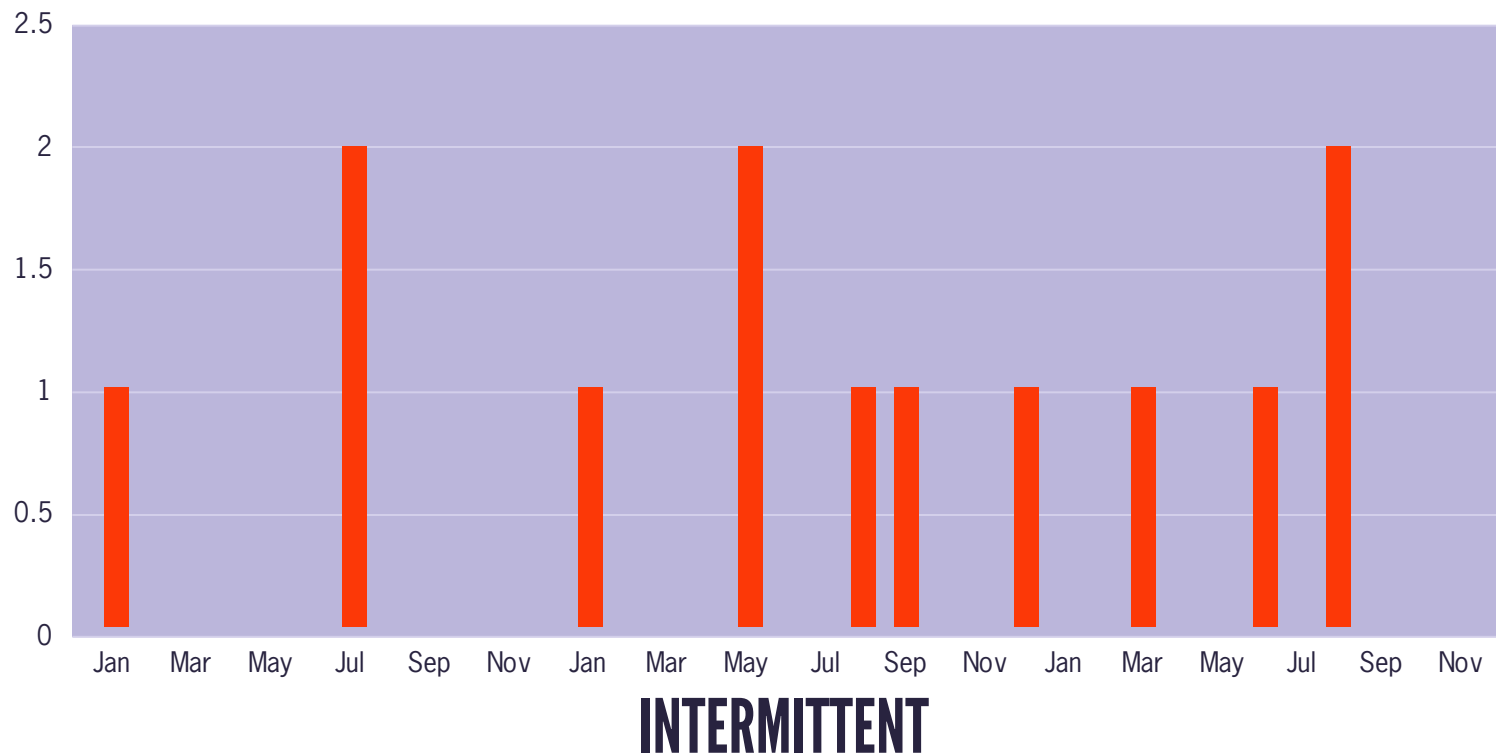
BUSINESS PROBLEM

- 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
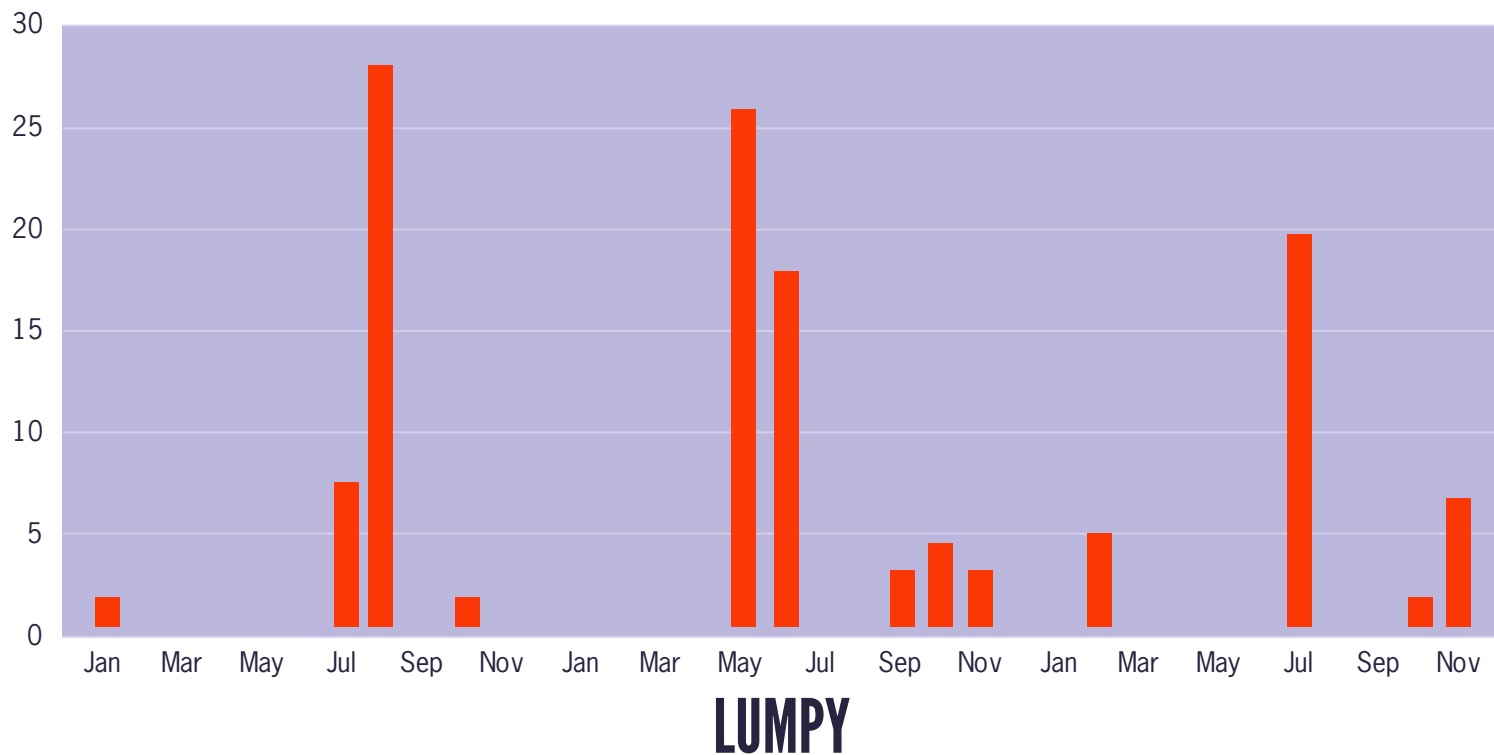
SOLUTION

- 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

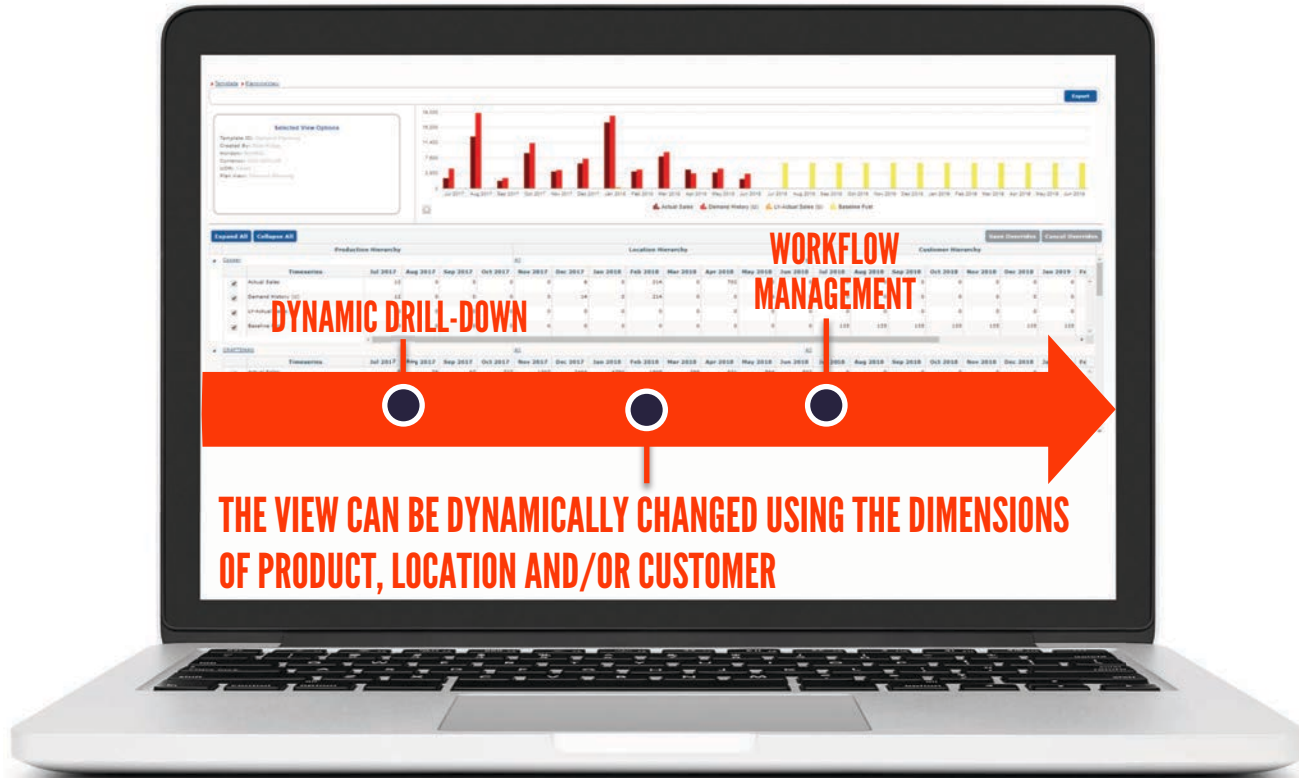# INTERMITTENT, LUMPY, SLOW MOVING

LUMPY

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

INTEGRATED BUSINESS PLANNING

DYNAMIC DRILL-DOWN

WORKFLOW MANAGEMENT

THE VIEW CAN BE DYNAMICALLY CHANGED USING THE DIMENSIONS OF PRODUCT, LOCATION AND/OR CUSTOMER

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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AUTO REGRESSIVE FORECASTING

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

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

Y_t = response variable at time t

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

ϕ_i = regression coefficients to be estimated

ε_t = error term at time t
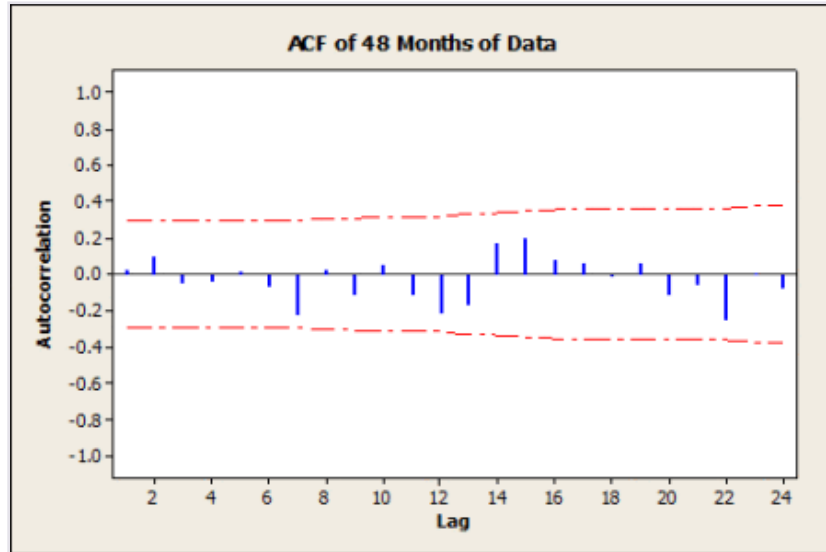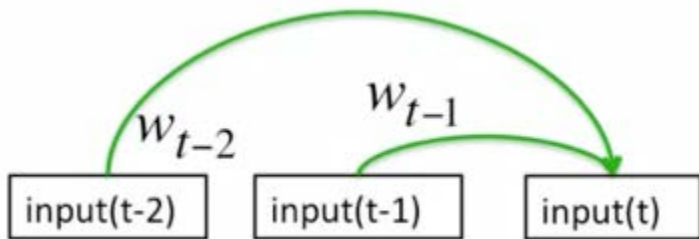
BUSINESS PROBLEM

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

CUSTOM GROUPS

Type of Group: Item or Location

Enter or Copy/Paste

Assign Items or Locations

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CUSTOM GROUPS

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

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NEURAL NETWORK

ELASTIC DEMAND

1. A 33% drop in price…

2. causes a 110% increase in demand quantity
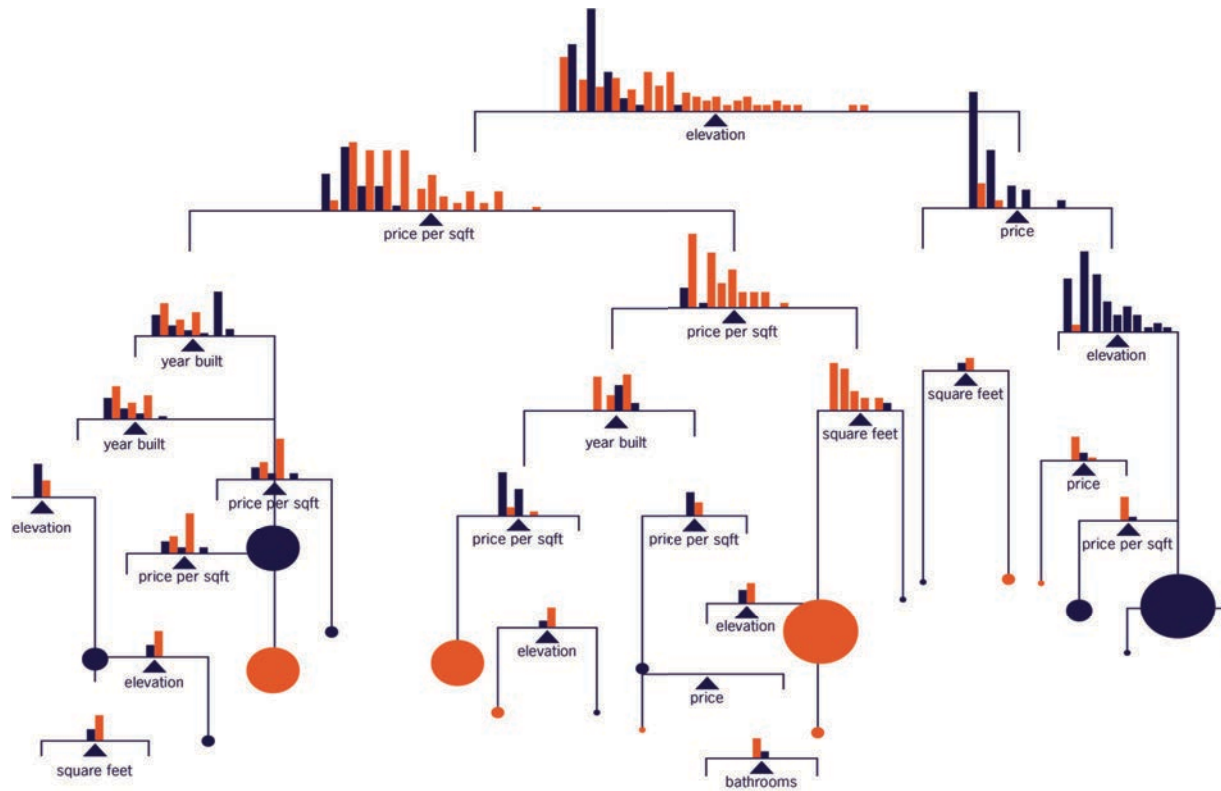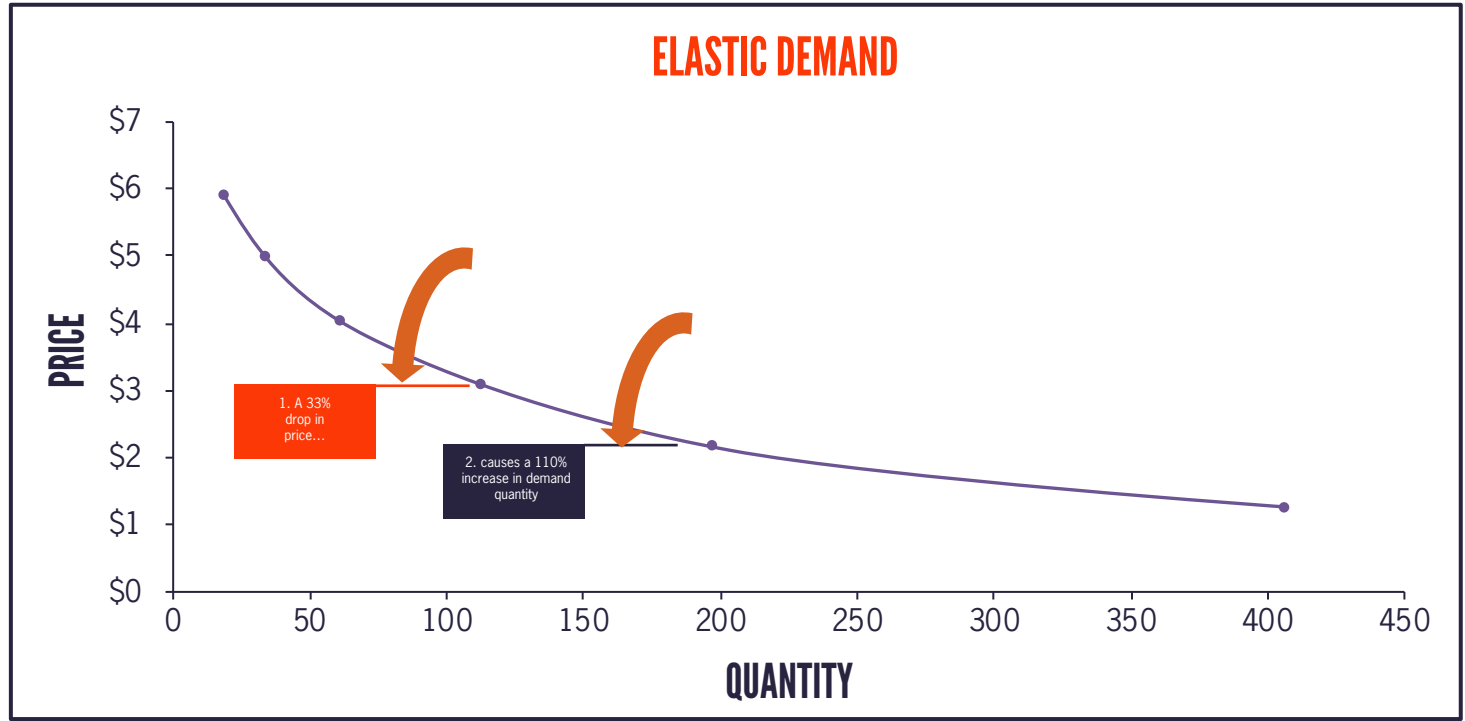
PRICE ELASTICITY

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

AGGREGATE DEMAND / TOP DOWN FORECASTING

OVERALL PROMOTION BREAKDOWN
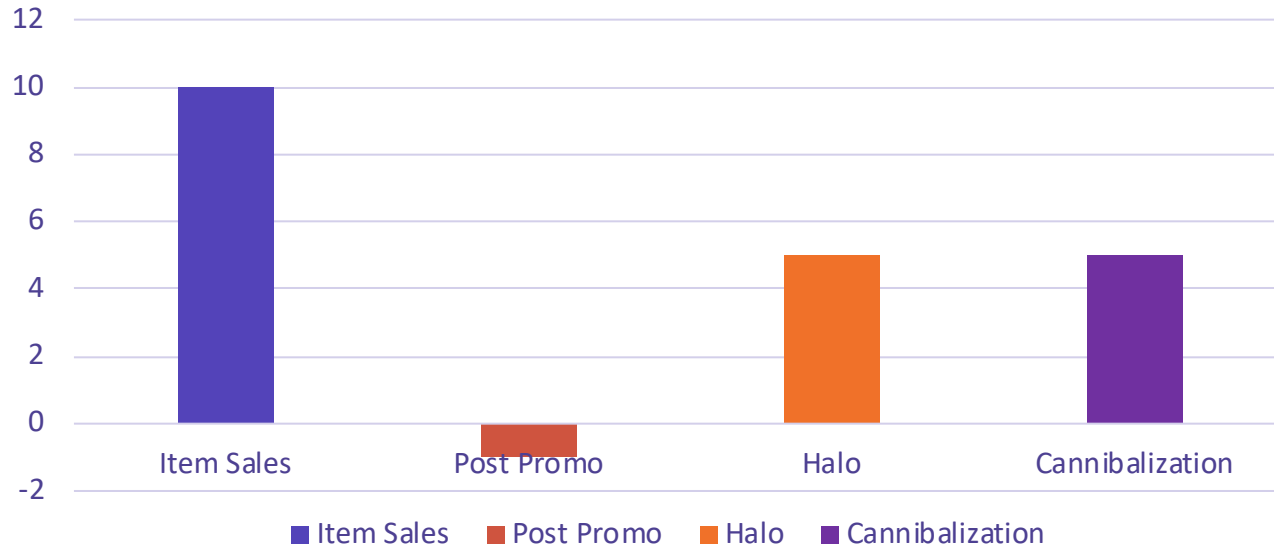
PROMOTION MANAGEMENT

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

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CUSTOMER REQUESTS PLANNED FOR Q2

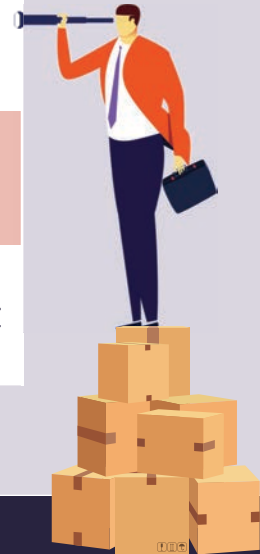|	
Event Flow	Enable "flow" of event goods with regular replenishment over course of event
Dashboard Item Alert Lists	Enable the item alert lists on the Dashboard to be saved by user
Order Item Detail	Improvements to Order Item Detail including adding Hold Out Name
Dashboard Filter	Add Item Groups to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

CUSTOMER REQUESTS PLANNED FOR Q2

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

CUSTOMER REQUESTS PLANNED FOR Q2

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

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THANK YOU