

PRODUCT UPDATE & OUTLOOK



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BLUE RIDGE
FOR A MORE FORESEEABLE FUTURE



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PRODUCT UPDATE

- MULTIPLE FORECAST MODELS
- ITEMS TO EXPEDITE
- LIST EXPORT
- INTEGRATED BUSINESS PLANNING



BUSINESS PROBLEM

The users of Supply Chain Planning frequently work with lists of items, suppliers, deals, events and so on. They sometimes need to filter their list in SCP for one of these tables and export the list to Excel to support a related project.

SOLUTION

Put an “Export” mechanism on frequently used list screens in Supply Chain Planning. When the user selects the “Export” button the solution displays a window that lets the user select the columns they want to export to Excel.

LIST SCREEN EXPORT

LIST SCREEN EXPORT

The screenshot shows the BLUE RIDGE system interface. The top navigation bar includes 'Dashboard', 'Daily Tasks', 'Advanced Tasks', 'Administrative', 'Reports', and 'Help'. The user is logged in as 'implementation' and the system date is 12/12/2016. The main content area displays the 'Item List' screen, which is filtered by 'Product Type: FCST>120'. The table shows columns for Item ID, Description, Supplier ID, Ship Point, Location, Units On Order, Units On Reserve, Days On Hand, Lead Time (Days), and Shelf Life. An 'Export' dialog box is open, allowing the user to save the list to an export library and select columns to export. The 'Export' button is highlighted with a red box and a red arrow pointing to it. A red callout box points to the 'Export Library' dropdown menu. Another red callout box points to the 'Columns to Export' list, which includes Item ID, Description, Supplier ID, Ship Point, Location, Order Quantity, Forecast Accuracy, Days Out of Stock, Seasonal Profile, and Expected Order Delivery Date. A red callout box at the bottom left points to the 'Export' button. A red callout box at the bottom right contains the text: 'After export the solution gives the user a message to download the list which displays in a CSV file and can be saved to another format.'

First, filter the list

Export to CSV File

Select the columns (data) to export

After export the solution gives the user a message to download the list which displays in a CSV file and can be saved to another format.

LIST SCREEN EXPORT



[Export Library](#)
 Y No Filters Selected

	Name	Created By	Creation Date	List Type	Column Selections	Filter Criteria
	Supplier 393 Lead Time Avg	BR Consulting	3/14/2018	Supplier List	Supplier ID,Name,Total Lead Time,Quoted Lead Time,Lead Time Deviation %,	List Filtered By:Supplier ID:393;
	Supplier Group Regional Stats	BR Consulting	3/14/2018	Supplier Group List	Supplier ID,Name,Location,Host Buyer,Setup Status,	No Filters Selected
	March Event List					No Filters Selected
	April Event List 18					List Filtered By: Status: Past;
	Supplier 123 Data					No Filters Selected
	Location 225 Data	BR Consulting	3/14/2018	Order List	Supplier ID,Name,Ship Point,Location,Days Delay,Order Total,Total Units,Buyer,PO Number,Supplier Group 1,Supplier Group 2,Supplier Group 3,Exclude from Lead Time Forecasting,	List Filtered By:Location:225;
	Item ABC All Locations	Blue Ridge	3/14/2018	Item List	Item ID,Description,Supplier ID,Ship Point,Location,Approved Order Quantity,Forecast Accuracy,Days Out of Stock,Seasonal Profile,Expected Order Delivery Date,Overstock Units,Overstock Amount,Manual/Frozen,Activity Code,Velocity Code,Company,Division,Region,Section,Group,Category,Buyer Interface Identifier,Buying Multiple Desc,Buvino Multiola (Units),Units On Hand,Units	No Filters Selected

New Export Library option is available in Advanced Tasks. This list displays all list exports and enables the user to re-run them or copy to create a new one.

RECENT DEVELOPMENTS IN DEMAND FORECASTING

Additional Forecast Models & Auto Select

FORECAST EACH SKU USING:

1. Adaptive Exponential Smoothing (same as you use now)
2. Least Squares Trend Line
3. Weighted Average Percent Change
4. Average Level Change
5. Average Percent Change
6. Moving Average
7. Moving Average Percent Change

Compare the forecast error by SKU by model using MAPE

Select the model for each SKU that produces the least forecast error

ADDITIONAL FORECAST MODELS & AUTO SELECT

Navigation:

Administrative >
Global controls >
Forecast Model
Factors

Indicates which forecasting mode is being used

- Average Level Change
- Average Percent Change
- Weighted Average Percent Change
- Least Squares Line Trend

All use a number of previous demand periods in the forecast calculation as defined by "Number of Periods to Use For:"

Forecast Model Factors

Adaptive Exponential Smoothing

Auto Select

Adaptive Exponential Smoothing

Number of Periods to Use For:

Average Level Change

Average Percent Change

Weighted Average Percent Change

Least Square Line Trend

Number of Moving Average Periods to Use For:

Moving Average

Moving Average Percent Change

Adaptive Exponential Smoothing works the same as prior. It can be the exclusive forecast model or part of the auto select process.

- Moving Average
- Moving Average Percent Change

Also require definition of number of periods to group for the moving average part of the calculation within the total "Number of Periods to Use." This is different than Perishable Forecast mode.

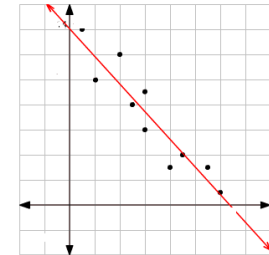
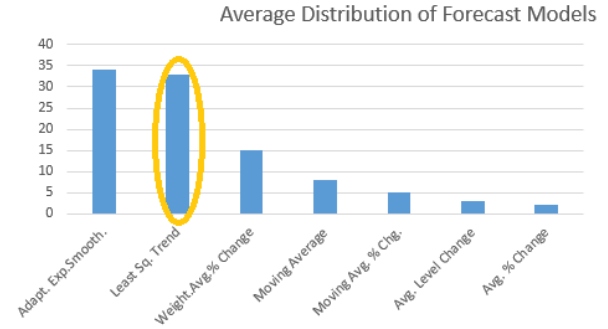
ADDITIONAL FORECAST MODELS & AUTO SELECT

- For demand behavior with discernable trend
- Fit a line to demand observations with least deviation

Table 6 Calculate Trend Based Forecast Where number of observations is odd				
Period	Demand	X	XY	X ²
1	3,837	-4	-15,348	16
2	4,633	-3	-13,899	9
3	5,536	-2	-11,072	4
4	6,798	-1	-6,798	1
5	8,382	0	0	0
6	9,941	+1	9,941	1
7	11,696	+2	23,392	4
8	12,731	+3	38,193	9
9	14,204	+4	56,816	16
TOTAL	77,758		81,225	60
	ΣY		ΣXY	ΣX^2

$a = \frac{\Sigma Y}{N}$	
$b = \frac{\Sigma XY}{\Sigma X^2}$	
$T = 8,639.78 + 1,353.75X$	
$T_{10} = 8,639.78 + (1,353.75) \times 5 = 15,408.53$	

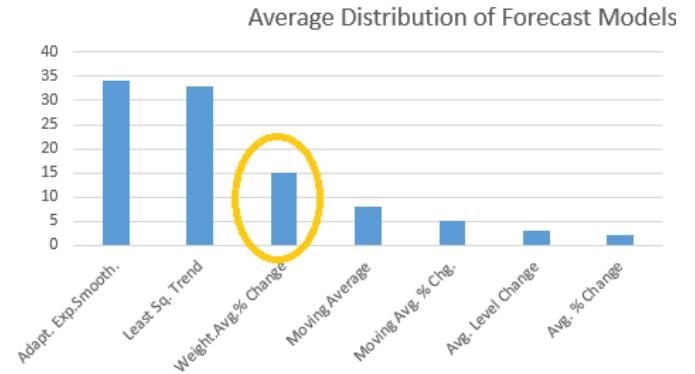
New Forecast = T	T = a + bX
T = Trended Forecast value	Which is the forecast
Y = Demand	
a = Intercept	$a = \Sigma Y \div N$
b = Slope of the line	$b = \Sigma XY \div \Sigma X^2$
X = Code value	Assigned



WEIGHTED AVERAGE PERCENT CHANGE

Weighted Average Percent Change Forecast Model

New Forecast = Current Period + WAPC	New Forecast = X + [(X) x (WAPC)]
Y = Percent Change	
W = Assigned Weight Per Period	
X = Last Forecast	
Weighted Average Percent Change (WAPC)	$WAPC = \sum YW \div \sum W$



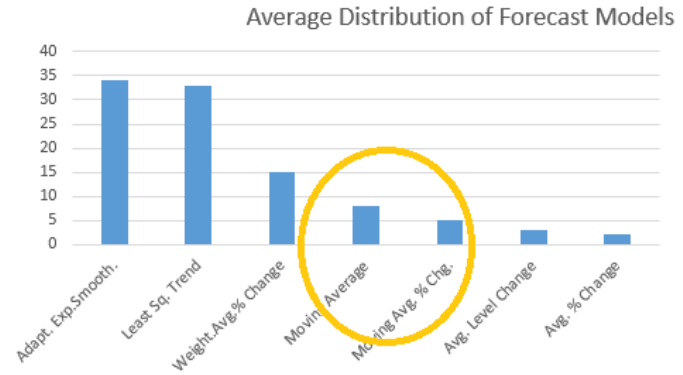
MOVING AVERAGE MODELS

Moving Average Forecast Model

New Forecast = Last Period + Moving Average Level Change	New Forecast = $Y + W$
Y = Last Period	
W = Moving Average Level Change of Last Period	
X = Period of Moving Average Amount	

Moving Average Percent Change Forecast Model

New Forecast = Last Period + Moving Average Level Change	New Forecast = $Y + W$
Y = Last Period	
W = Moving Average Level Percent Change of Last Period	
X = Period of Moving Average Amount	



AVERAGE LEVEL CHANGE MODELS

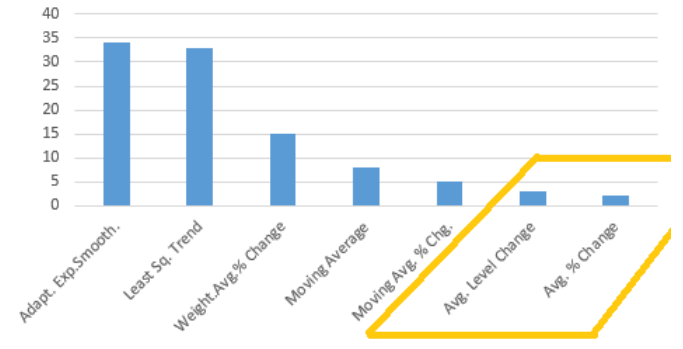
Average Level Change Forecast Model

New Forecast = $Y + \text{Average Change (AC)}$	New Forecast = $Y + AC$
$Y = \text{Last Forecast}$	
$X = \text{Sum of All Level Change}$	
$N = \text{Number of changes}$	
Average Change = (AC)	$AC = \sum X \div N$

Average Percent Change Forecast Model

New Forecast = $Y + \text{Average Percent Change (APC)}$	New Forecast = $Y + (Y \times \text{APC})$
$Y = \text{Last Forecast}$	
$X = \text{Sum of All Average Level Percent Change}$	
$N = \text{Number of changes}$	
Average Change =	$AC = \sum X \div N$

Average Distribution of Forecast Models



BUSINESS PROBLEM

- Buyers need an overview of items that may be out before delivery, displayed in a list, and prioritized in order of importance.
- Buyers need to be able to locate open orders containing a specific item.

SOLUTION

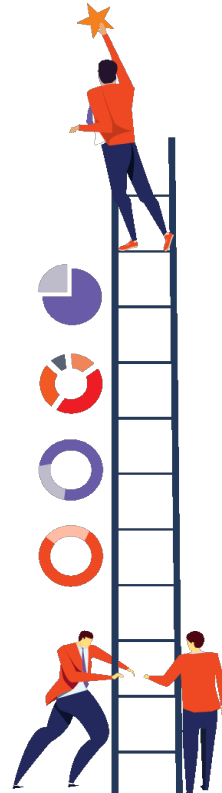
- A new list of open order item lines will be added that includes flexible sort options.
- Additional filter options will be added for the open order lists that allow buyers to easily filter a list for the orders that contain a specific item.

ITEMS TO EXPEDITE

DASHBOARD

▼ Open Order Alerts

Past Due	<u>32</u>
Short Shipments	<u>8</u>
Orders to Expedite	<u>13</u>
Suspended Orders	<u>0</u>
All Open Orders	<u>32</u>
Open Order Items	<u>220</u>



OPEN ITEMS LIST

> Open Items List

List Filtered By: Alert Type: All Open Items

Export View

	Item ID	Item Description	Supplier ID	Ship Point	Location	O Number	Order Date	Order Receipt	Open Quantity	On Hand	On Order	Projected Lost Units	Allowed Lost	Projected Out
🗕 🗕 🗕	102851	SAN MIGUEL ESPECIAL, S	10649	4606000911	209	503142	3/29/2017	05/07/2017	11664	4621	23328	11485.27	116.64	4/13/2017
🗕 🗕 🗕	136811	SAN MIGUEL ALKOHOLF	10649	4606000911	209	503142	3/29/2017	05/07/2017	5184	3672	12960	4692.98	51.84	4/19/2017
🗕 🗕 🗕	140715	MAHOU 5,5% , 50 CL	10649	4606000911	209	503142	3/29/2017	05/07/2017	3024	1172	6048	2205.8	30.24	4/17/2017
🗕 🗕 🗕	102951	SAN MIGUEL ESPECIAL, S	10649	4606000911	209	503142	3/29/2017	05/07/2017	1920	3636	6720	1246.2	19.2	5/1/2017
🗕 🗕 🗕	102851	SAN MIGUEL ESPECIAL, S	10649	4606000911	209	502550	3/14/2017	4/21/2017	12960	15565	10368	539.27	129.6	5/5/2017
🗕 🗕 🗕	136811	SAN MIGUEL ALKOHOLF	10649	4606000911	209	502550	3/14/2017	4/21/2017	6480	8016	6480	348.98	64.8	5/4/2017
🗕 🗕 🗕	140715	MAHOU 5,5% , 50 CL	10649	4606000911	209	502550	3/14/2017	4/21/2017	3024	3214	3024	163.8	30.24	5/4/2017
🗕 🗕 🗕	139688	ALHAMBRA RESERVA 19	10649	4606000911	209	502550	3/14/2017	4/21/2017	504	5	0	49.43	20.16	4/6/2017
🗕 🗕 🗕	102951	SAN MIGUEL ESPECIAL, S	10649	4606000911	209	502550	3/14/2017	4/21/2017	2880	5616	3840	32.88	28.8	5/7/2017
🗕 🗕 🗕	131635	MAHOU CINCO ESTRELL	10649	4606000911	209	502550	3/14/2017	4/21/2017	12	10	12	0.18	0.48	5/2/2017
🗕 🗕 🗕	120790	ALHAMBRA RESERVA, 35	10649	4606000911	209	502550	3/14/2017	4/21/2017	2592	5657	3888	0	0	
🗕 🗕 🗕	135451	SAN MIGUEL FRESCA 4,4	10649	4606000911	209	502550	3/14/2017	4/21/2017	6480	33408	5400	0	0	
🗕 🗕 🗕	135451	SAN MIGUEL FRESCA 4,4	10649	4606000911	209	503142	3/29/2017	05/07/2017	14040	23568	11880	0	0	
🗕 🗕 🗕	140671	SAN MIUGEL GLUTEN FR	10649	4606000911	209	503142	3/29/2017	05/07/2017	1296	576	0	0	0	

List contains all item order lines from all open orders.

- Supplier, ship point, and location columns are included in the list.
- You choose sort column preference, and SCP remembers, by user, until you change it.



OPEN ITEMS LIST NAVIGATION

> [Order Lines List](#)

List Filtered By: Item ID: 102851 Export View

	Item ID	Item Description	Supplier ID	Ship Point	Location	PO Number	Order Date	Order Receipt	Open Quantity	On Hand	On Order	Projected Lost Units	Allowed Lost	Projected Out
	102851	SAN MIGUEL ESPECIAL, 3	10649	4606000911	209	503142	3/29/2017	05/07/2017	11664	4621	23328	11483.27	116.64	4/13/2017
	102851	SAN MIGUEL ESPECIAL, 3	10649	4606000911	209	502550	3/14/2017	4/21/2017	12960	15565	10368	539.27	129.6	5/5/2017

Navigation icons allow you to access:

- Open order containing the selected line.
- Item Manager
- Item Forecast



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

BLUE RIDGE

User: test System Name: IBP Demo System Date: 1/22/2018 - [Logout](#)

Dashboard
Daily Tasks
Advanced Tasks
Collaborative Planning
Administrative
Reports
Help

Brand Manager Forecast

> [Item List](#) > [Item Forecast](#) > [Mass Maintenance](#) > [Mass Maintenance Request](#) > [Global Controls](#) > [Template](#) > [Brand Manager Forecast](#)

Selected View Options

Template ID: Brand Mgr Review

Created By: Brand Mgr 1

Forecast Level: Brand - Region

Horizon: Monthly

Currency: USD - DOLLAR

UOM: Units

Plan View: Brand Manager

[Lock Plan](#)

Export
Cancel Override
Save Override

■ Actual Sales (U)
 ■ LY-Actual Sales (U)
 ■ Baseline Fcst (U)
 ■ Sales Fcst (U)
 ■ Brand Mgr Fcst (U)

DEFAULT VIEW				<-- History								Current	Future -->		
	Brand	Region	Time Series	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18
<input checked="" type="checkbox"/>	CROWN VALLEY BLACKBE...	ALL	Actual Sales (U)	176	144	194	194	220	192	192	0	0	0	0	0
<input checked="" type="checkbox"/>			LY-Actual Sales (U)	189	192	213	194	212	233	183	237	321	183	232	276
<input type="checkbox"/>			Brand Mgr Fcst Acc %	82	87	77	88	89	95	93	0	0	0	0	0
<input checked="" type="checkbox"/>			Baseline Fcst (U)	191	163	239	217	228	183	213	219	246	225	173	249
<input checked="" type="checkbox"/>			Sales Fcst (U)	203	163	239	217	240	183	207	219	246	231	173	249
<input type="checkbox"/>			Brand Adj (U) (+/-)	4	0	0	0	4	0	-2	0	0	0	0	0
<input checked="" type="checkbox"/>			Brand Mgr Fcst (U)	207	163	239	217	244	183	205	219	246	231	173	249

BLUE RIDGE

FOR A MORE FORESEEABLE FUTURE

PRODUCT OUTLOOK

-  CUSTOM GROUPS
-  ASSORTED INCREMENTAL ENHANCEMENTS
-  SEASONAL IDENTIFICATION & DEMAND CLASSIFICATION
-  AUTO REGRESSION FORECASTING
-  TOP DOWN FORECASTING
-  ARTIFICIAL INTELLIGENCE



APRIL RELEASE

OUTL Hard Max	Enable a hard order-up-to-level maximum to accommodate items with highly intermittent demand
Projection Export	Enhancement to significantly relax limits to size of projection export
Upper Echelon SS Overrides in DOS	For MEIO configurations using Safety Stock Pooling enable safety stock overrides in days-of-supply
Item List Columns	Addition of multiple new column choices on the Item List
Order Summary Item List	New column on embedded item list in Order Summary that extends SOQ x Selling Unit Cost



MAY RELEASE

Dependent Demand Drilldown	Enable drilldown from upper echelon Order Item Detail to see quick view of SKUs contributing to Dependent Demand
Order Summary Alert Toggle	Enable toggle to show only active alerts on Order Summary and conditionally display all Activity Codes
Order Item Detail	Add linked Item ID on Order Item Detail similar to Item Forecast page
Lost Sales Calculation	Enable a new option to use both “Interfaced” and “Calculated” options to populate lost sales



JUNE RELEASE

External Orders	Enable orders not created in SCP to be interfaced back into SCP Open Order
Event/Order Item Detail	Enable a faster way for user to see all events to which an Item is assigned (link on OID to new list of Item/Events)
Selling Days / Supplier	Add the Selling Days control that is currently a Global setting to the Supplier Manager (enable SD by location)
Pick Up Lead Time	Display the Pick Up Lead Time from the Source Master on: Supplier Manager, Approve Order, Recommend Order
Deal Manager Items	Make the embedded deal item list columns sortable



BUSINESS PROBLEM

Need the ability to create custom groups of locations/items that can be filtered 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, in mass maintenance jobs, and for seasonal profiles
- 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

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

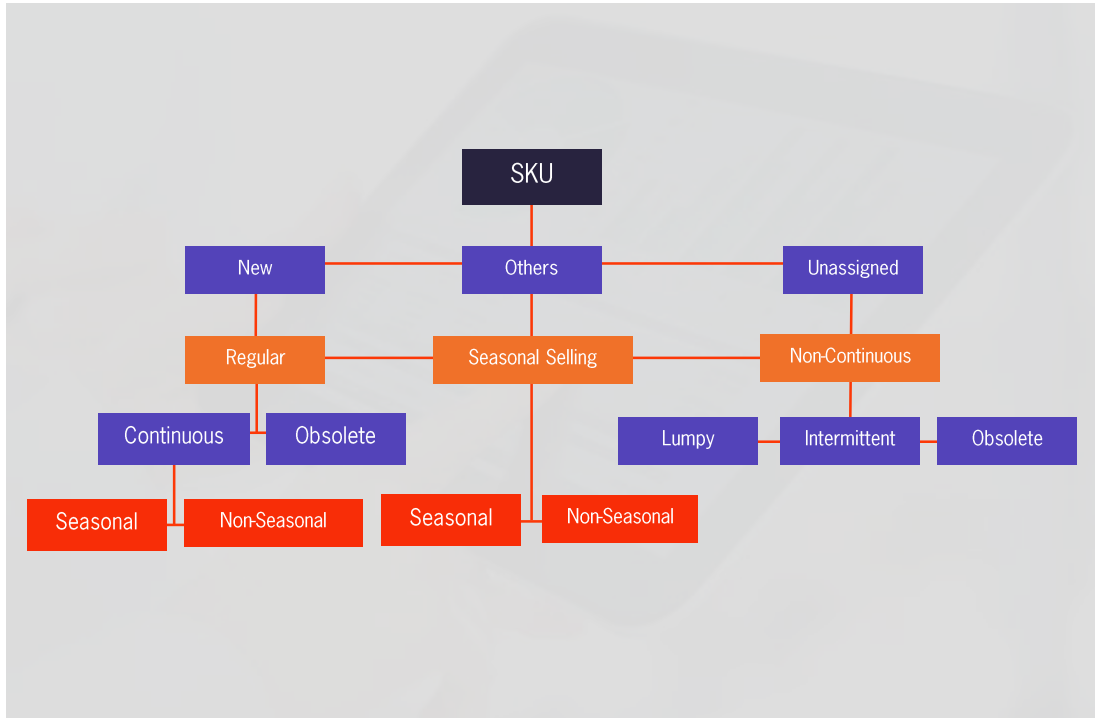
Unassigned	Assigned	Move
153	156	
158	157	
161	129	
162	159	
163	165	

Type of Group: Item or Location

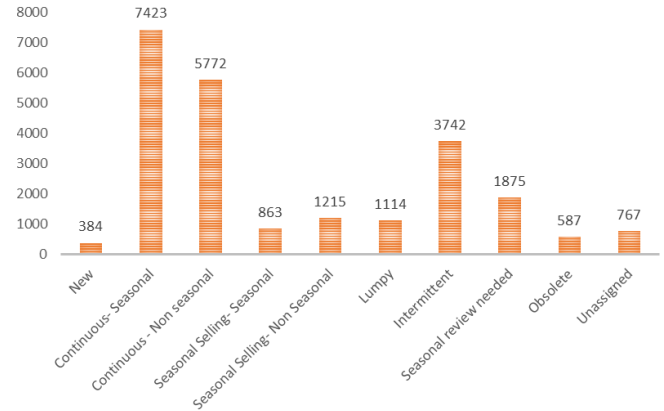
Enter or Copy/Paste

Assign Items or Locations

DEMAND CLASSIFICATION & SEASON IDENTIFICATION



CLASSIFICATION DISTRIBUTION



AUTO REGRESSIVE FORECASTING

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

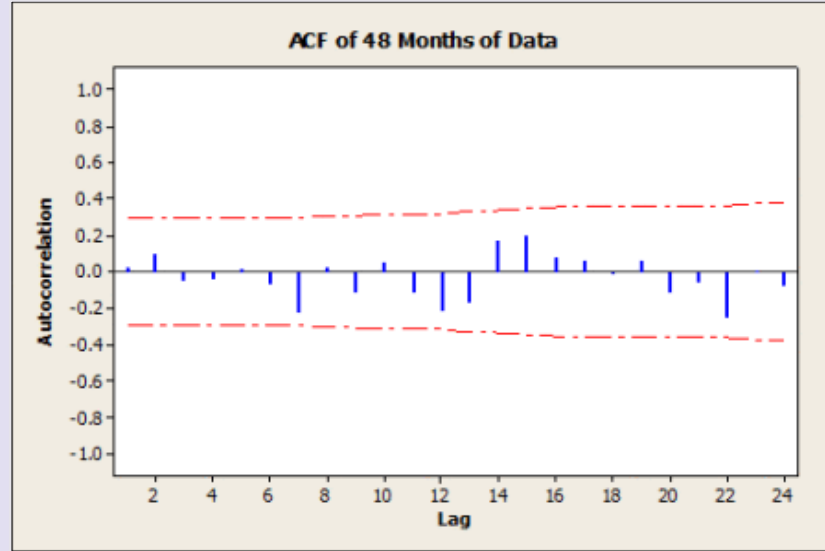
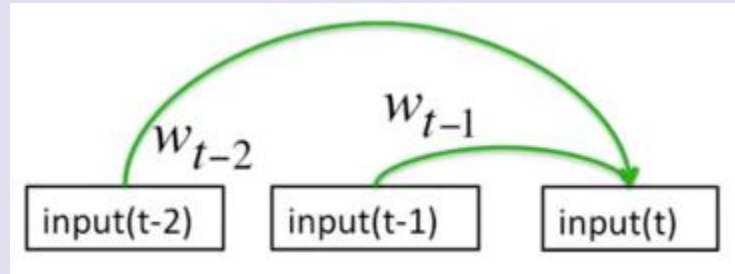
$$Y_t = \phi_0 + \phi_1 Y_{t-1} + \phi_2 Y_{t-2} + \dots + \phi_p Y_{t-p} + \varepsilon_t$$

Y_t = response variable at time t

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

ϕ = regression coefficients to be estimated

ε_t = error term at time t



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

TOP DOWN FORECASTING

FORECAST ERROR

Item/Location

2.1%

Category/Location

1.6%

Department/Location

4.5%

**SYSTEM AUTOMATICALLY USES
BEST FORECAST**