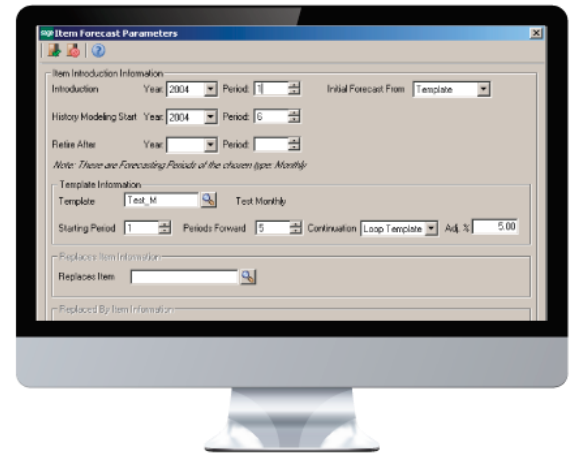




ANYTIME 500 FORECAST MODELING

Statistical Calculations, Replacement Items, and Forecast Templates for Demand Planning.

Accurate demand forecasts are essential for distributors and manufacturers to determine which products to buy or make and how many to keep on hand in order to avoid stock-outs and lost sales. An accurate forecast minimizes carrying costs, reduces financial exposure due to high inventory levels, maximizes labor and machine utilization, helps reduce overtime, and minimizes machine setup and tear down.



It is very likely that you have Excel on your computer—it's a great product, but it's not designed for forecasting. Spreadsheet forecasting almost always relies on simple formulas built into large, complex spreadsheets. By implementing Forecast Modeling, you get an affordable, integrated solution which dramatically improves your forecast accuracy and processes. You don't have to be an expert in statistics to create accurate demand forecasts. Forecast Modeling automatically selects the most appropriate statistical forecasting model for each item based on the item's sales history.

Forecast Modeling includes a start date so that you can define a specific date to begin calculating demand forecasts for new items. A forecast template is available for items that have no sales history. Templates can be used for a specified period of time until there is enough sales history to generate future demand forecasts. An end date may be defined for phased out items so that you no longer generate demand forecasts. You may also define a replacement item. The original item will be phased-out and replaced by another item that will inherit its sales history which is used for future, statistical demand calculations related to the products they buy, make, and sell.



Product Features

Statistical Forecasting

Future forecasts are generated using historical sales and shipment data from Sage 500 ERP. The statistical forecast engine leverages ForecastPro Unlimited, the leading forecasting product developed by Business Forecast Systems. ForecastPro Unlimited is embedded and completely integrated within Forecast Modeling.

Forecast by Item/Group

You can generate statistical demand for all items in a forecast product group or for individual items.

Expert Wizard

An expert wizard is built-into the statistical calculation to analyze historical data to determine the most appropriate forecasting model for each forecast product group. Forecast models include simple moving average, discrete data, Croston's Intermittent model, exponential smoothing, Box-Jenkins, and seasonality.

Simple Moving Average

A simple moving average uses average demand for a fixed sequence of periods and is good for stable demand with no pronounced behavioral patterns. Simple Moving Average is widely used in business because it's so easy to implement. However, it is really only appropriate for very short or very irregular data sets where statistical features like trend and seasonality cannot be determined.

Discrete Data Model

Discrete Data Models (Poisson or negative binomial) are used for data consisting of small whole numbers. These models are usually deployed for slow-moving items with small quantities per order. These models do not consider trends or seasonality due to the small and inconsistent demand history.

Croston's Model

Croston's Intermittent Model is specifically designed to deal with sporadic demand (no seasonality) with a two-step process. The main goal is to provide a good safety stock, resulting in a situation where there is neither over nor under stock. This is accomplished by considering two aspects of the data: the demand size and the demand occurrence. Croston's Intermittent model recognizes both

Industries

- Manufacturing
- Wholesale Distribution

Required Modules

- Inventory Management (Sage)
- Material Requirements Planning or Inventory Replenishment (Sage)
- Sales Forecasting & MPS (e2b)

Integrated Modules

- Sales Order (Sage)
- Inventory Management (Sage)
- Material Requirements Planning and Inventory Replenishment (Sage)
- Sales Forecasting & MPS (e2b)
- Enhanced MRP (e2b)

Benefits Overview

- Forecast Generation based on historical sales and shipments
- Advanced Statistical Exponential Smoothing,
- Box-Jenkins, Seasonality, and more
- Integrated with Sales Forecasting and MRP for Demand Planning
- Create model templates for new product introductions
- Define forecast start date (product introduction) and end date (product phase out)
- Define product supersession where replacement items inherit sales history from former items

ClientCare Plans

- Free Upgrades and Hot Fixes
- Unlimited Product Support
- Installation Assistance & Training



the sporadic timing of inventory and that the average order is actually a misrepresentation if it is spread evenly over the number of days. It is not widely known or used but is extremely useful, especially for slow-moving items that are ordered to restock a downstream inventory requirement. Forecasts are non-trended and non-seasonal.

Exponential Smoothing

Exponential Smoothing models are widely applicable. They are also widely used, because of their simplicity, accuracy, and ease of use. Their robustness makes them ideal even when the data is short and/or volatile. Exponential smoothing works by identifying and extracting trend and seasonality, and extrapolating them forward. Exponential Smoothing models also accommodate promotions and weekly seasonality.

Box-Jenkins

Box-Jenkins is a more elaborate statistical method than exponential smoothing. Box-Jenkins works by capturing the historic correlations of the data, and extrapolating them forward. It often outperforms exponential smoothing in cases when the data is fairly long and nonvolatile. However, it performs best when the data isn't statistically messy.

Seasonality

Seasonality is applied to products that have predictable, seasonable demand fluctuations. There must be at least two years of historical data in order for seasonality to be applied to statistical calculations. Three or more years of history typically produce more accurate results.

Point Forecasts

The point forecast is the statistical forecast or mean value of the distribution of future values calculated using the selected forecasting algorithm.

Event Models

If your data is driven by promotions or exhibit hard-to-capture seasonality (e.g., weekly data) you may want to experiment with event models. These models allow you to assign each period into logical categories and incorporate an adjustment for each category. For example, if you establish a category for promoted months then your model would include an adjustment for promoted months. If you ran three different types of promotions, you could establish three categories and have a different adjustment for each type of promotion.

Confidence Limits

An upper and lower confidence limit are calculated with the upper limit calibrated to the ninety-fifth percentile meaning that the actual value should fall at or below the upper confidence limit about 95% of the time.

Forecast Groups

Forecast Modeling is an extension to the Sales Forecasting module. Items must be assigned to a Forecast Product Group which defines how the group of items is forecasted. Forecast Product Groups may be defined by item, warehouse, customer, territory, and sales representative or any combination of these options.



Start/End Dates

You may define a start date and end date for forecasting to define the date to start generating statistical forecasts for new items or to stop generating statistical demand forecasts for phased-out items.

Forecast Templates

New items with no sales history are often difficult to forecast. Forecast templates allow you to define different demand forecasts which may be applied to new items and adjusted up or down. The forecast template will be used for a specified period of time (such as 12, 18, or 24 months) until there is adequate sales history to switch to statistical forecast models.

Replacement Items

You can define item supersession where the original item is phased-out (no future demand forecasts will be generated) and the replacement item inherits its sales history for future, statistical forecast calculations. This is common in many industries, especially those where model year items are phased out and replaced annually.

Multiple Forecasts

You can generate multiple forecasts by forecast version and by year. This is helpful when creating demand forecasts toward the end of the year or for long-term planning.

Graphing & Reporting

Forecast reports and graphs are accessible from within the statistical forecasting engine and through Business Insights Explorer. Reports and graphs may be customized or exported to external applications such as Microsoft Excel.

Benchmark Analysis

Forecast data is available in a Business Insights Analyzer task for inquiry and analysis. You can quickly generate pivot tables and charts to benchmark forecasts against actual sales or to identify forecast trends.

Financial Forecasts

Rough-cut financial forecasting and estimated cash flow projections are available using the Business Insights Analyzer task which includes a reference price and cost for items in each forecast.

Demand Dates

You can optionally use the Sales Order Request Date instead of the fulfillment date for calculations. This is important for many distributors or manufacturers since demand forecasts may need to reference the date of the original request due to stock-out situations where the actual fulfillment date was different than the date where the demand was received.



sage Setup Forecast Product Groups

Product Group Id: mTest_PG Product Description: Test

Warehouse: Rialto

Forecast Type: Srep, Cust, Item

Forecast Period Type: Monthly Smooth Period Type: Weekly

Smoothing Method: True Smoothing Front Roll: 3 Demand Periods Forward in MRP

Allocate Quantities by Percentage

Item Allocations

Item ID
Cable/FT
Cable100
Cable50
Cable500
Cable300
Cable400

sage Maintain Forecast Template

Template ID: Test_M Template Description: Test Monthly

Period Type: Monthly Periods: 0

Period Offset	Quantity
1	10
2	10
3	20
4	20
5	20
6	20
7	30

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Setup Forecast Options

Display Prior Sales History Start Month of Periods: January

Display Prior Forecasts Prior Years to Display: 5

Accumulate Requested Date-based Sales Analysis

sage Re-Calculate Request-Based Sales Analysis

Date Range

From Fiscal Year: 2002 Period: 1

To Fiscal Year: 2005 Period: 12

Note: These are standard Inventory Periods, not Forecasting Periods.

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Actual Sales vs. Forecasted Monthly Data Analysis/Explorer

Anal. Type	Customer	Fcst Vers.	Item	Warehouse	Qty_01	Qty_02	Qty_03	Qty_04	Qty_05	Qty_06
Tran. History	"Unspecified"	mTest_V	1.44 Flop	Rialto	3,133.00	3,164.00	275.00	0.0	1.00	1.00
Request History	"Unspecified"	mTest_V	1.44 Flop	Rialto	0.0	0.0	0.0	0.0	0.0	0.0
Forecasts	"Unspecified"	mTest_V	1.44 Flop	Rialto	0.0	0.0	1,681.00	1,681.00	1,681.00	1,681.00
Tran. History	"Unspecified"	mTest_V	28.8 Mod	Rialto	677.00	668.00	210.00	0.0	0.0	0.0
Request History	"Unspecified"	mTest_V	28.8 Mod	Rialto	677.00	668.00	210.00	0.0	0.0	0.0
Forecasts	"Unspecified"	mTest_V	28.8 Mod	Rialto	0.0	0.0	668.00	668.00	668.00	668.00
Tran. History	"Unspecified"	mTest_V	2way Rad	Rialto	0.0	0.0	0.0	0.0	0.0	0.0
Request History	"Unspecified"	mTest_V	2way Rad	Rialto	0.0	0.0	0.0	0.0	0.0	0.0
Forecasts	"Unspecified"	mTest_V	2way Rad	Rialto	0.0	0.0	10.00	10.00	21.00	21.00
Tran. History	"Unspecified"	mTest_V	8.4GB Ha	Rialto	6.00	0.0	3.00	0.0	4.00	0.0
Request History	"Unspecified"	mTest_V	8.4GB Ha	Rialto	0.0	0.0	3.00	0.0	0.0	0.0
Forecasts	"Unspecified"	mTest_V	8.4GB Ha	Rialto	0.0	0.0	2.00	4.00	4.00	1.00
Tran. History	"Unspecified"	mTest_V	Cable/FT	Rialto	0.0	0.0	0.0	0.0	0.0	0.0
Request History	"Unspecified"	mTest_V	Cable/FT	Rialto	0.0	0.0	0.0	0.0	0.0	0.0
Tran. History	"Unspecified"	mTest_V	Cable/FT	Rialto	0.0	0.0	0.0	0.0	0.0	0.0

Actual Sales vs. Forecasted Weekly Data Analysis/Explorer

Customer Name	Item	Qty_01	Qty_02	Qty_03	Qty_04	Qty_05	Qty_06	Qty_07	Qty_08	Qty_09	Qty_10	Qty_11
"Unspecified"	Cable200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,373.00	2,373.00	2,373.00
"Unspecified"	1.44 Floppy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	380.00	380.00	380.00
"Unspecified"	28.8 Mode	0.0	297.0	380.00	0.0	0.0	422.00	0.0	246.0	210.00	0.0	0.0
"Unspecified"	28.8 Mode	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	151.00	151.00	151.00
"Unspecified"	1.44 Floppy	365.0	415.0	2,353.00	0.0	0.0	490.00	1,390.0	1,284.0	105.00	170.00	0.0
"Unspecified"	QuickTax	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	7.00	7.00	7.00
"Unspecified"	8.4GB Hard	0.0	0.0	6.00	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0
"Unspecified"	2way Radio	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	2.00	2.00
BlackWel	Cable100	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
BlackWel	Cable300	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
BlackWel	Cable500	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
BlackWel	Cable50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
BlackWel	Cable400	.56	.56	.56	.57	.60	.60	.60	.60	.56	.56	.56
BlackWel	Cable/FT	.56	.56	.56	.57	.60	.60	.60	.60	.56	.56	.56
"Unspecified"	Cable400	.49	.49	.49	.49	.52	.52	.52	.52	.49	.49	.49
"Unspecified"	Cable/FT	.49	.49	.49	.49	.52	.52	.52	.52	.49	.49	.49
"Unspecified"	Cable400	.38	.38	.38	.38	.40	.40	.40	.40	.38	.38	.38
"Unspecified"	Cable/FT	.38	.38	.38	.38	.40	.40	.40	.40	.38	.38	.38
"Unspecified"	Cable50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
"Unspecified"	Cable50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
"Unspecified"	Cable50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
"Unspecified"	Cable50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DawsComp	Cable50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DawsComp	Cable50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DawsComp	Cable50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DawsComp	Cable50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Update Forecast Performance Analysis

Forecast Version:

Year:

Period Type:

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