



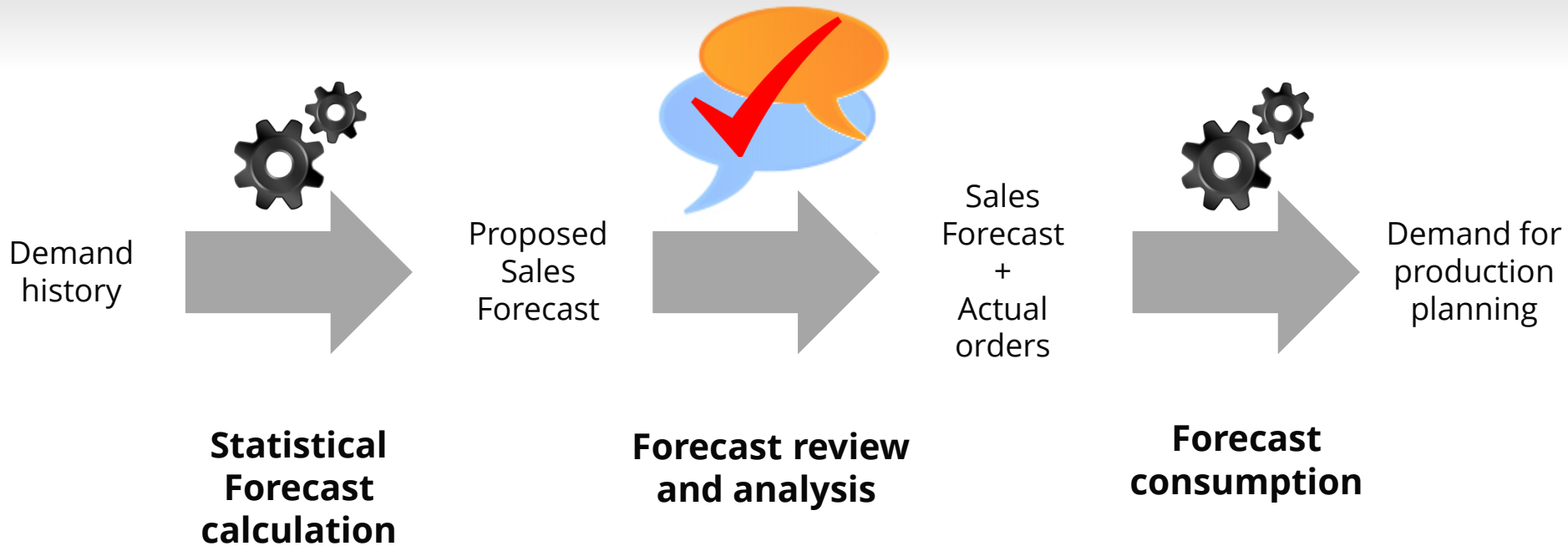
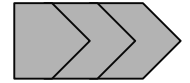
**Open source supply chain planning software**

**Introduction for forecast planners**

# Agenda

- Forecasting workflow
  - Statistical forecasting
  - Forecast review and analysis
  - Forecast consumption
- A day in the life of a forecast planner
  - Cockpit screen
  - Forecast editor screen
  - Forecast overview report
  - Other screens

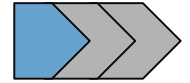
# Forecasting workflow



Workflow steps:

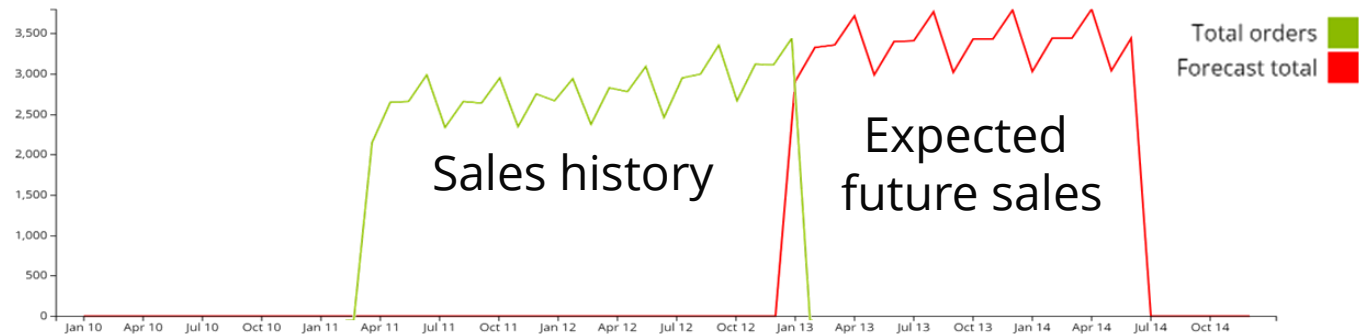
1. Statistical forecast generation
2. Forecast review and analysis
3. Forecast consumption

# Forecasting workflow

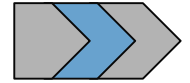


## 1 Statistical Forecast Generation

- Statistical methods to extrapolate demand history
  - Moving average – flat forecast
  - Single exponential – flat forecast
  - Double exponential – trending demand
  - Winters – seasonal demand
  - Croston – intermittent demand
- Pick-best based on SMAPE forecast error
- Auto-tuning of parameters
- Outlier detection and trimming
- Calculation at lowest level or aggregate level

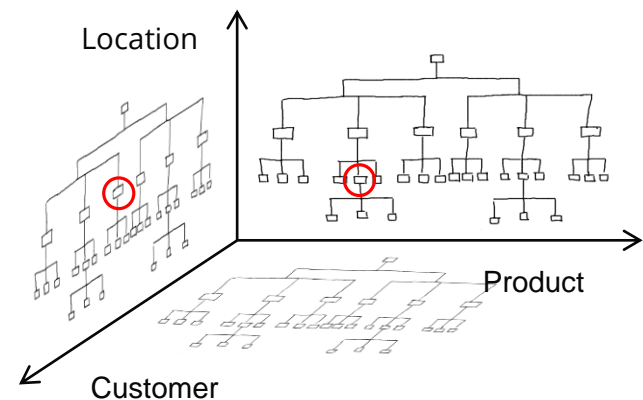


# Forecasting workflow

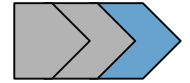


## 2 Forecast Review

- Forecast planners and sales people review the forecast and edit it with extra information
  - Review outliers in the demand history
  - Add forecast values for new products
  - Add promotions
  - Exclude exceptional one-off sales from the demand history
- Review and editing at any level in product, location, customer and time dimension
  - Sales manager reviews forecast for his region
  - Account manager reviews forecast for his customers
  - Product manager reviews forecast for a product range
  - General manager reviews overall forecasted sales value
  - ...



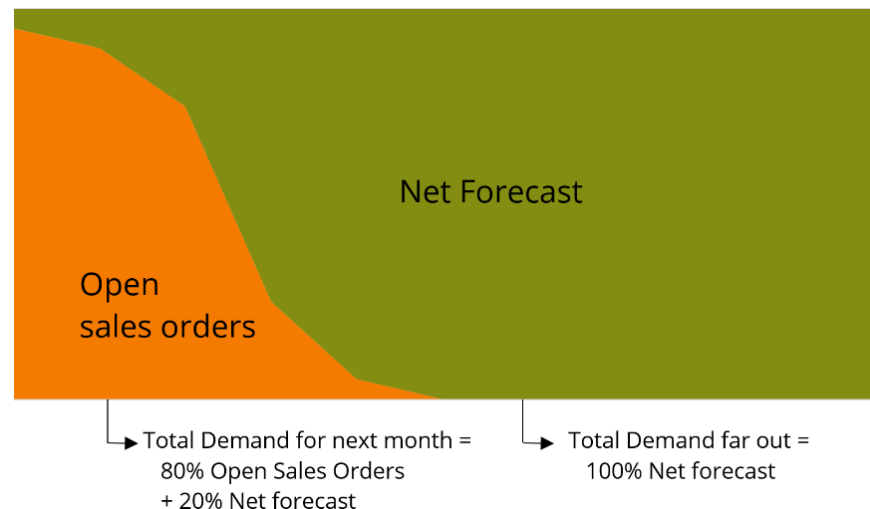
# Forecasting workflow



## 3 Forecast consumption

- Net open sales orders from forecast
  - Short term demand consists primarily of customer sales orders.
  - Longer term demand consists primarily of sales forecast
- The forecast consumption logic reconciles both into a demand signal that is consistent and complete across the planning horizon

Gross forecast: 100  
Orders already received: 20  
=> Net forecast: 80



# Agenda

- Forecasting workflow
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  - Forecast review and analysis
  - Forecast consumption
- A day in the life of a forecast planner
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  - Forecast editor screen
  - Forecast overview report
  - Other screens

# Cockpit screen

- All users workflows start their work on the cockpit screen
- Every user can configure a personal dashboard with the widgets that fit his/her tasks
- For a forecast planner the following widgets can be useful:
  - Forecast overview
  - Forecast error
  - Late orders
  - Short orders

**FORECAST**

Month	Forecast
Mar 15	20k
Apr 15	20k
May 15	25k
Jun 15	35k
Jul 15	35k
Aug 15	30k
Sep 15	25k
Oct 15	25k
Nov 15	25k
Dec 15	25k
Jan 16	25k
Feb 16	30k
Mar 16	30k
Apr 16	30k
May 16	35k
Jun 16	35k
Jul 16	35k
Aug 16	35k
Sep 16	30k
Oct 16	30k
Nov 16	30k
Dec 16	30k
Jan 17	10k

**LATE ORDERS**

Name	Due	Planned date	Delay
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**SHORT ORDERS**

Name	Due	Short
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**PURCHASE ORDERS**

Date	Confirmed orders	Proposed orders within 7 days	Proposed orders within 30 days
Feb 16	0	80k	100k
Mar 16	0	20k	20k
Apr 16	0	20k	20k
May 16	0	50k	80k
Jun 16	0	20k	20k
Jul 16	0	20k	60k

**DEMAND ALERTS**

Type	Count	Weight
late	9	48

**DELIVERY PERFORMANCE**

93%

**FORECAST ERROR**

Month	Forecast Error
Mar 15	0
Apr 15	0
May 15	0
Jun 15	0
Jul 15	0
Aug 15	0
Sep 15	0
Oct 15	0
Nov 15	0
Dec 15	0
Jan 16	0

**PURCHASE ORDER ANALYSIS**

Item	Supplier	Enddate	Quantity	Criticality
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**INVENTORY BY LOCATION**

Location	Inventory
Tennis shop	50k
Tennis shop Paris	10k
Tennis shop Brussels	10k

**INVENTORY BY ITEM**

Item	Inventory
Al	15k
Ten	10k



# Forecast editor: top section

- The forecast editor is the main screen for demand review and editing
- The top section allows fast and intuitive navigation in the location, item and customer hierarchies
- The bottom part of the screen shows the detailed information of the selected intersection in the

**LOCATIONS**

	Feb 16	Mar 16	Apr 16
▼ All locations	250	273	245
Tennis shop Brussels	138	151	152
Tennis shop Paris	112	122	94

**ITEMS**

	Feb 16	Mar 16	Apr 16
▼ All items	138	151	152
▼ All material	104	106	115
Novak racket	61	62	63
All-surface tennis ball pack	20	29	34
Tennis racket	9	5	4
Clay tennis ball pack	8	5	10
Hard tennis ball pack	5	6	4
Umpire chair	0	0	0
► All sports gear	34	45	37

**CUSTOMERS**

	Feb 16	Mar 16	Apr 16
Generic customer	20	29	34

**FORECAST: Tennis shop Brussels - All-surface tennis ball pack - Generic customer**

Save Undo Recalculate

Attributes Forecast Comments History

Legend: open orders (blue), total orders (green), forecast total (red)

	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16	Dec 16	Jan 17
Total Orders 3 Years Ago	42	33	36	41	54	66	113	26	11	28	47	20
Orders Adjustment 3 Years Ago												
Total Orders 2 Years Ago	19	21	30	12	140	148	116	13	7	28	13	37
Orders Adjustment 2 Years Ago												
Total Orders 1 Years Ago	8	39	43	22	72	139	57	27	44	17	11	38
Orders Adjustment 1 Years Ago												
Total Orders	0	0	0	0	0	0	0	0	0	0	0	0
Open Orders	0	0	0	0	0	0	0	0	0	0	0	0
Forecast Baseline	20	29	34	23	80	109	85	20	20	22	21	29
Forecast Override												
Total Forecast	20	29	34	23	80	109	85	20	20	22	21	29

# Forecast editor: bottom section

- The bottom part allows easy editing of the selected intersection
  - forecasted demand
  - historical demand
  - Statistical forecast method
- Use tabs to
  - Review attributes
  - Edit forecast
  - Leave comments
  - Show the editing history
- Use the 'recalculate' button to preview the impact of your changes on the forecast

Tennis shop Paris

NOVAK racket

	01	02	03
All-surface tennis ball pack	20	29	34
Tennis racket	9	5	4
Clay tennis ball pack	8	5	10
Hard tennis ball pack	5	6	4
Umpire chair	0	0	0
▶ All sports gear	34	45	37

Save
Undo
Recalculate

Attributes
Forecast
Comments
History

**FORECAST: Tennis shop Brussels - All-surface tennis ball pack - Generic customer**

	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16	Dec 16	Jan 17
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**Parameters**

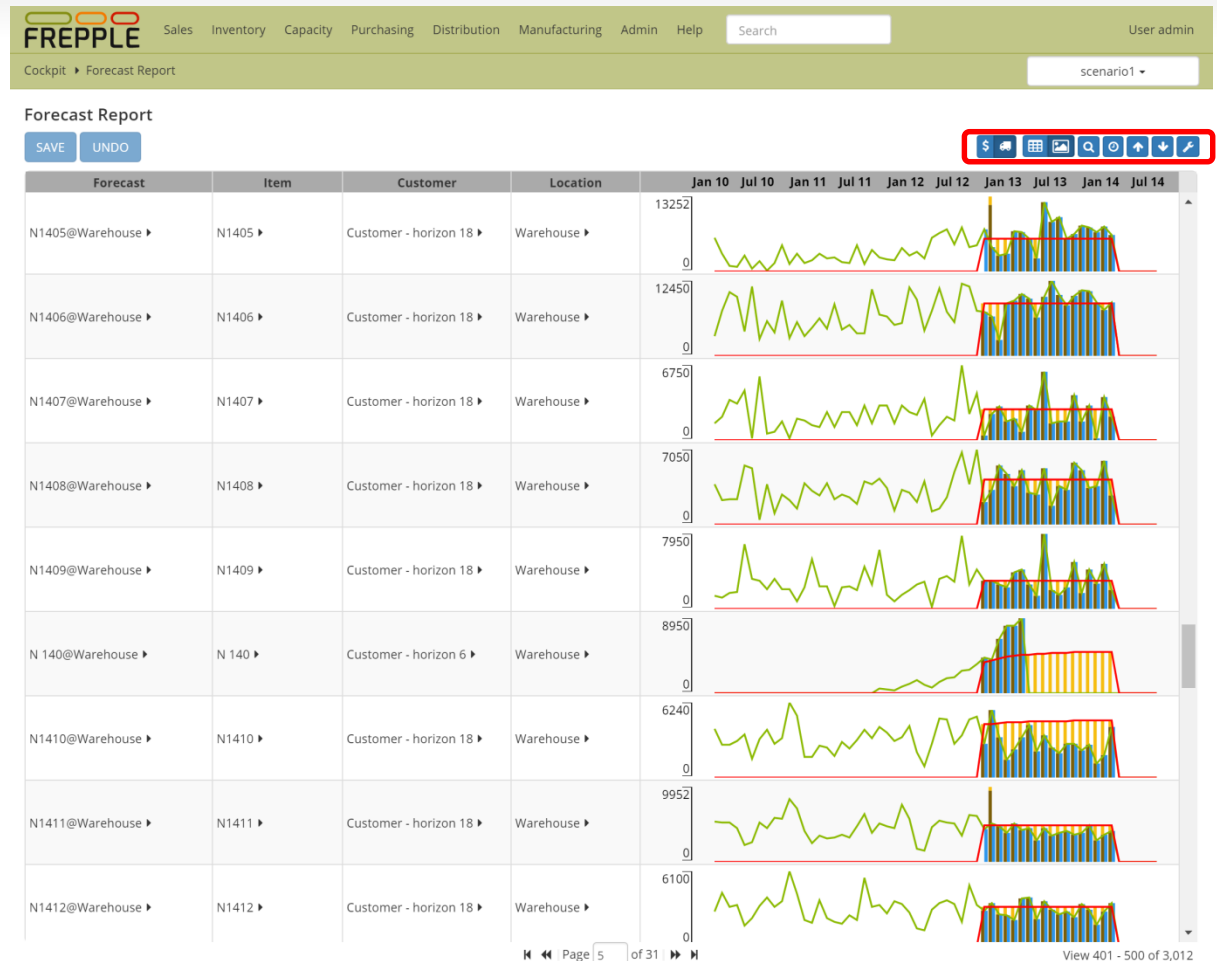
Forecast method:

Selected forecast method:

Estimated forecast error: %

# Forecast overview report

- The forecast editor shows a single intersection at a time
- The forecast report allows the planner to quickly review and edit lots of intersections
- Display results
  - Flexible filtering capabilities
  - In units or in \$-value
  - Graph or table
- Export data to Excel spreadsheet or CSV-file
- Import data from Excel spreadsheet or CSV-file



# Other screens

- Other screens used for occasional review and analysis, depending on the forecast planners responsibilities:
  - Alerts for demand outliers
    - Drill down to review the outlier
  - Alerts for customer sales orders that will be shipped late or short
    - Drill down provides detail on the delivery plan
    - Identify the constraints causing the delivery delay
  - Sales order list showing all customer sale orders
    - Normally this list will be populated with an automated interface from the ERP system
  - Inventory planning screen
    - Also has the capability to edit forecasts for a item+location
    - For forecast planners also responsible for some aspects of the replenishment planning this may be useful alternative/extension for the forecast editor screen
  - Order quoting screen
    - Displays the expected delivery date for a new customer order you are about to enter in the ERP system
    - Computes a feasible delivery date considering all capacity, material and lead time constraints

# Try it out yourself

Online demos can be accessed at:

<https://manufacturing.frepple.com>

<https://distribution.frepple.com>

User : admin

Password : admin

**Hint:**

Use the "guided tour" to walk through the "day-in-the-life" workflows