

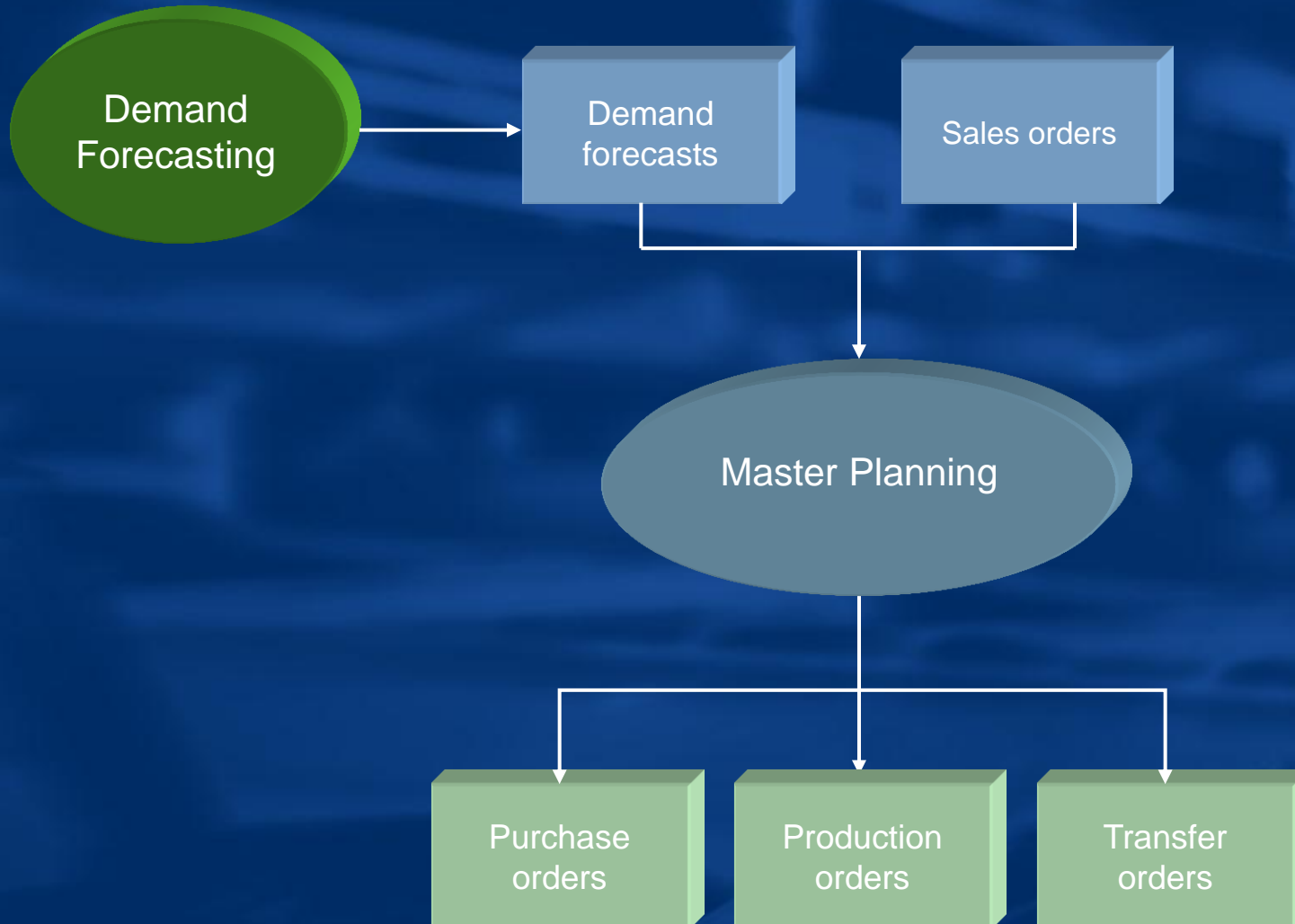


ADAPTABLE SOLUTIONS **people + solutions:** working together, delivering success

# Demand Forecasting for Dynamics AX



# Fully integrated AX module



# Key features

- Forecasts can be calculated automatically or entered manually
- Graphical view for comparison of forecasts and demand history
- Adjust forecasts either online, or offline using Excel
- Full support for key Dynamics AX item dimensions
- Designed to manage large volumes of data
- Built within AX using X++ development language

# Release 4.1 - New Features

- Item supersessions
- New Summary Item Forecast screen
- Ability to recalculate base forecasts even if manual changes have been made
- Forecast Accuracy Report extended to provide selection of Forecast Models
- Enhanced OLAP cube



**Forecasts can be automatically calculated or manually entered**

**Items are grouped for ease of maintenance**

**Customers are grouped to consolidate demand and improve forecast accuracy**

Forecast item group: **Speakers** Description: **Speakers** Forecast customer group: **Retail** Description: **Retail**  
 Note: Forecast sales group: **REP1** Description: **Rep 1**

Forecast

Overview Formula Dimension

Item number	Product name	Site	War...	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12
1101	High End Speaker - ash/12 inches	1	11	111	102	113	54	64	69	91	61	78	93	79	79
1101	High End Speaker - ash/12 inches	1	12	62	62	79	34	30	35	53	43	84	54	8	8
1102	High End Speaker - ash/14 inches	1	11	65	65	65	62	65	62	68	62	65	68	5	5
1102	High End Speaker - ash/14 inches	1	12	119	111	94	42	32	55	31	44	95	55	9	9
1103	High End Speaker - ash/16 inches	1	11	82	75	63	64	66	47	60	51	68	64	8	8
1103	High End Speaker - ash/16 inches	1	12	60	60	60	57	60	57	63	57	60	63	5	5
1107	High End Speaker - mahogany/...	1	11	73	65	93	50	58	34	48	40	46	45	5	5
1107	High End Speaker - mahogany/...	1	12	70	67	57	29	40	46	48	46	61	62	5	5
1109	High End Speaker - mahogany/...	1	11	59	87	135	35	40	48	43	65	53	91	10	10

Other information

Forecast display...	Product name	Site	Wa...	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Demand Yr-1	High End Speaker - ash/12 inches	1	11	99	124	62	34	43	67	83	31	61	98	89
Demand Yr-2	High End Speaker - ash/12 inches	1	11	82	75	113	31	35	37	65	39	55	33	39
Demand Yr-3	High End Speaker - ash/12 inches	1	11	73	33	101	11	35	23	29	45	39	60	51
Forecast base	High End Speaker - ash/12 inches	1	11	111	102	113	54	64	69	91	61	78	93	79
Promotions	High End Speaker - ash/12 inches	1	11											

**Forecast at any dimension level**

# Forecasting and Item Dimensions

The Item Dimension 'levels' at which forecasts are generated are configurable.

Here is an example:

	Sales Invoices	Demand Forecast Calculation	Final Demand Forecast
Item	✓	✓	✓
Site	✓	✓	✓
Warehouse	✓	✓	✓
Configuration	✓		✓
Colour	✓		
Size			

The level at which forecasts are automatically calculated or manually entered

The level at which forecasts are required by Master Planning

In this case, the final forecast is pro-rated from the calculated forecast based on demand history ratios

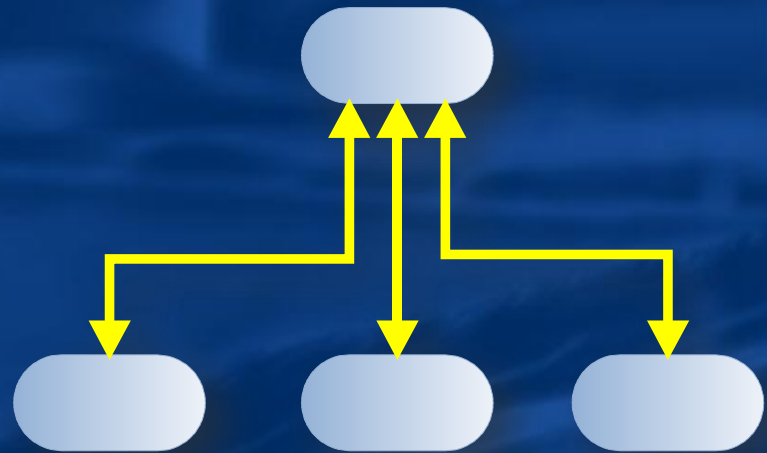
# Collaborative Forecasting

- Forecast Sales Groups specify who manages forecasts for each customer
- Forecasts can be adjusted online, or offline using Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Se
	Forecast item group	Forecast custom	Item Id	Site	Wa	Configu	Color	Size	Data Type	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Se
2	Audio	Retail	0500	1	11				Forecast	193	258	202	244	292	323	
3	Audio	Retail	0500	1	11				Demand Yr-1	212	296	203	248	251	359	
4	Audio	Retail	0500	1	11				Demand Yr-2	134	220	186	192	315	303	
5	Audio	Retail	0510	1	11				Forecast	251	356	356	286	333	358	
6	Audio	Retail	0510	1	11				Demand Yr-1	256	228	232	261	245	393	
7	Audio	Retail	0510	1	11				Demand Yr-2	173	186	185	234	320	255	
8	Audio	Retail	0520	1	11				Forecast	206	206	224	336	303	336	
9	Audio	Retail	0520	1	11				Demand Yr-1	206	206	224	336	303	336	
10	Audio	Retail	0520	1	11				Demand Yr-2	128	196	170	157	338	314	
11	Audio	Retail	0525	1	11				Forecast	115	205	172	147	175	194	
12	Audio	Retail	0525	1	11				Demand Yr-1	127	178	122	149	151	215	
13	Audio	Retail	0525	1	11				Demand Yr-2	80	132	112	115	189	182	
14	Audio	Retail	0550	1	11				Forecast	183	193	192	215	250	269	
15	Audio	Retail	0550	1	11				Demand Yr-1	192	171	174	196	184	295	
16	Audio	Retail	0550	1	11				Demand Yr-2	130	140	139	176	240	191	
17	Speakers	Retail	1101	1	11				Forecast	162	208	278	248	291	294	
18	Speakers	Retail	1101	1	11				Demand Yr-1	162	208	278	248	291	294	
19	Speakers	Retail	1101	1	11				Demand Yr-2	121	193	190	203	262	211	
20	Speakers	Retail	1102	1	11				Forecast	227	209	268	311	291	334	
21	Speakers	Retail	1102	1	11				Demand Yr-1	226	209	268	311	291	334	
22	Speakers	Retail	1102	1	11				Demand Yr-2	113	209	225	225	251	240	
23	Speakers	Retail	1103	1	11				Forecast	202	232	220	289	287	264	
24	Speakers	Retail	1103	1	11				Demand Yr-1	210	208	187	312	282	262	
25	Speakers	Retail	1103	1	11				Demand Yr-2	167	241	226	225	272	270	
26	Speakers	Retail	1107	1	11				Forecast	214	209	171	331	289	251	

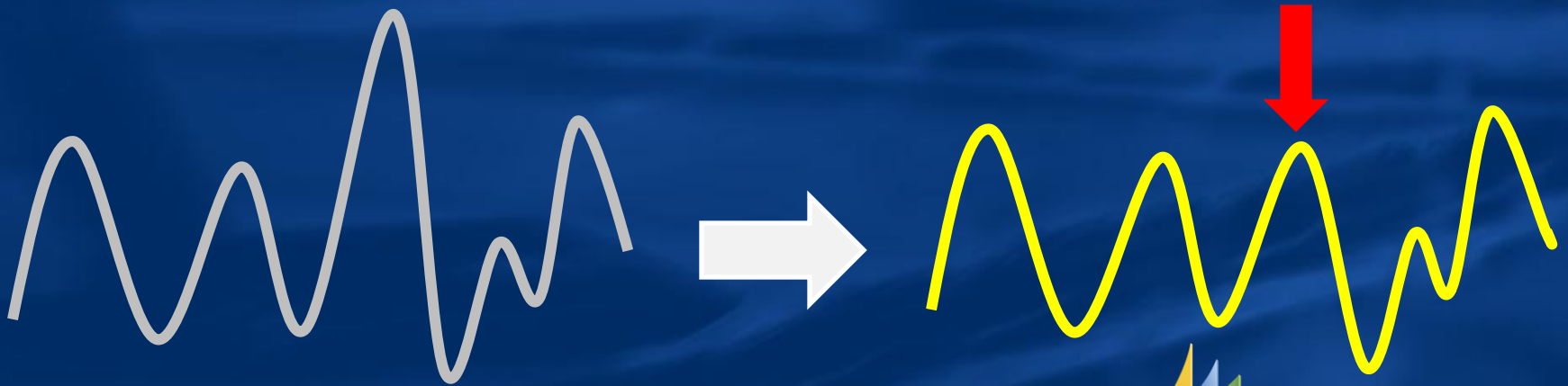
# Forecast Item Groups

- Forecasts are always calculated by item
- Forecast Item Groups consolidate data
  - For viewing
  - Adjustments may be made at group level
  - Adjustments are pro-rated down to items



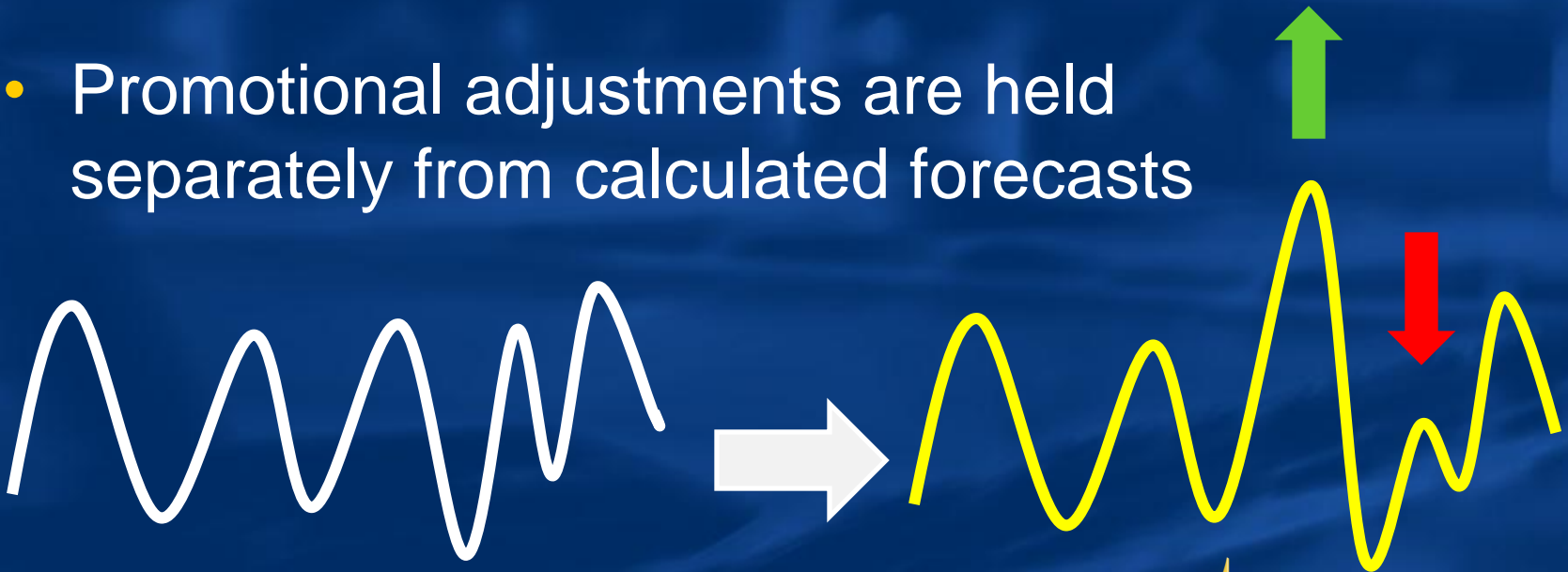
# Abnormal Demand

- Ability to flag abnormal demand
  - For example an abnormally large order is received from a customer to stock stores for a sale
  - You want to adjust the demand history to prevent future forecasts being inflated
  - Manual adjustments are always held separately from actual demand history



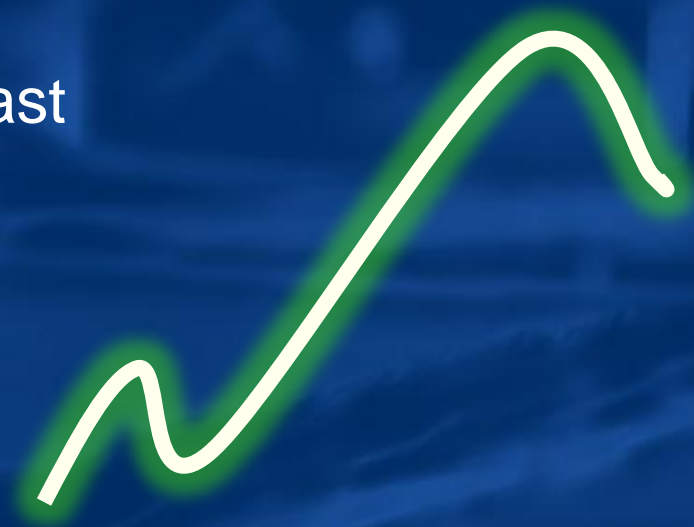
# Promotions

- Ability to enter the likely impact of promotions for forward planning
- A promotion may drive up sales in a period, but reduce sales in a subsequent period
- Promotional adjustments are held separately from calculated forecasts



# Product Life Cycle

- Start of Life
  - Copy history from a similar or superseded item
- End of life
  - Manually determine when the run-out should occur
  - Disable item from being forecast
  - Copy history to a new item



# Forecasting Formulae

- Same as last year's demand +/- n%
- n-month moving average
- n-month moving average with trend
- Average of same months last 2 years
- Average of same months last 2 years with trend
- 'Best fit' formula selection using the Forecast Pro forecasting engine

# Forecast Pro Formulae

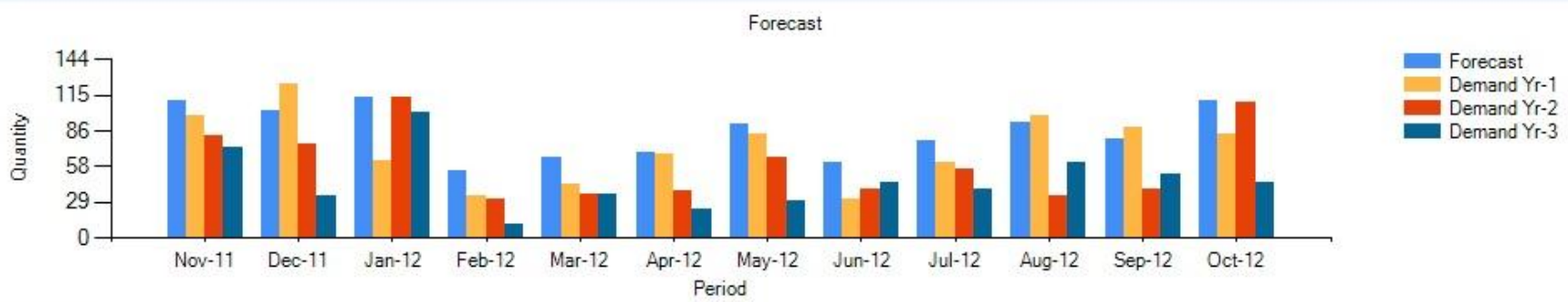
- Simple Moving Averages
- Discrete Data Models
- Croston's Intermittent Demand Model
- 9 Exponential Smoothing Models
- Univariate Box-Jenkins Model
- Event Models
- 4 Curve Fitting Models
- Dynamic Multiple Regression

# Other Features

- Forecast periods
  - Forecasts are calculated by week, month or user-definable periods
  - Monthly forecasts can be automatically split into weekly forecasts (or even further if required) using period keys
- Forecast accuracy
  - Multiple forecast models enable a forecast to be frozen and compared to actual demand over the forecast period
- Fully multi-lingual capable
  - English language labels are shipped with the product
  - Other language labels to be developed by resellers

# Demand Forecasting Roadmap

- Automatic detection of abnormal demand history
- User selection of Forecast Pro formulae
- Forecast exception tracking
- Extensions to collaborative forecasting to track who made changes
- Option to include retail POS sales when accumulating demand history
- Ability to forecast a new retail shop by copying demand history from an existing shop



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