

Oracle BI 11g Reports and Dashboards

Tables, Pivot Tables and Graphs

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indicators

Tables, Pivot Tables and Graphs

Agenda

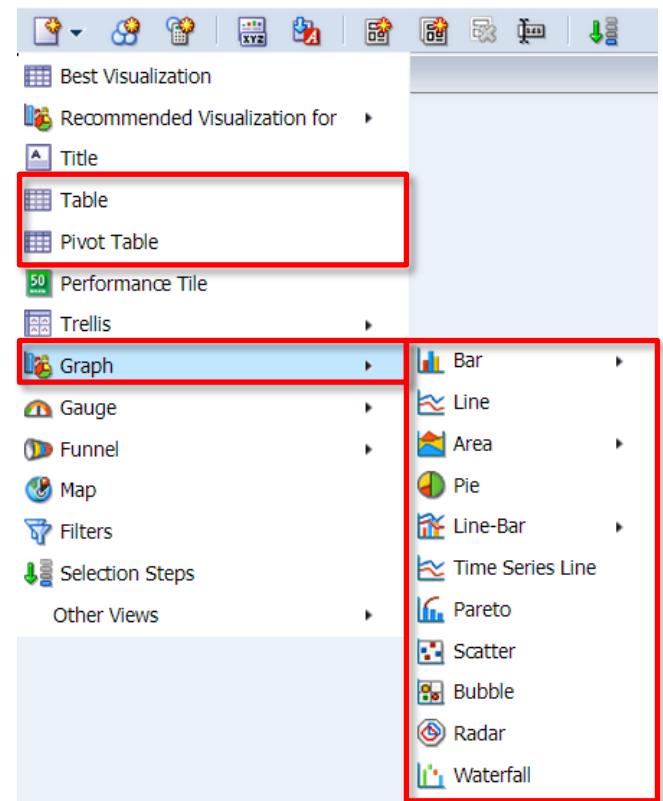
- Overview
- Common View Options
- Important Notes
- Tables
- Pivot Tables
- Table and Pivot Table Interactions
- Graphs
- Common Graph Types

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Tables, Pivot Tables and Graphs Overview

Overview

- OBIEE provides a variety of views to suit almost all reporting needs
- This topic will guide you through the most common views and settings
- Note that it is up to the report developers to spend time experimenting with the many features available
- Never be afraid of “trial and error” when it comes to finding the most suitable graph and style for each specific report!



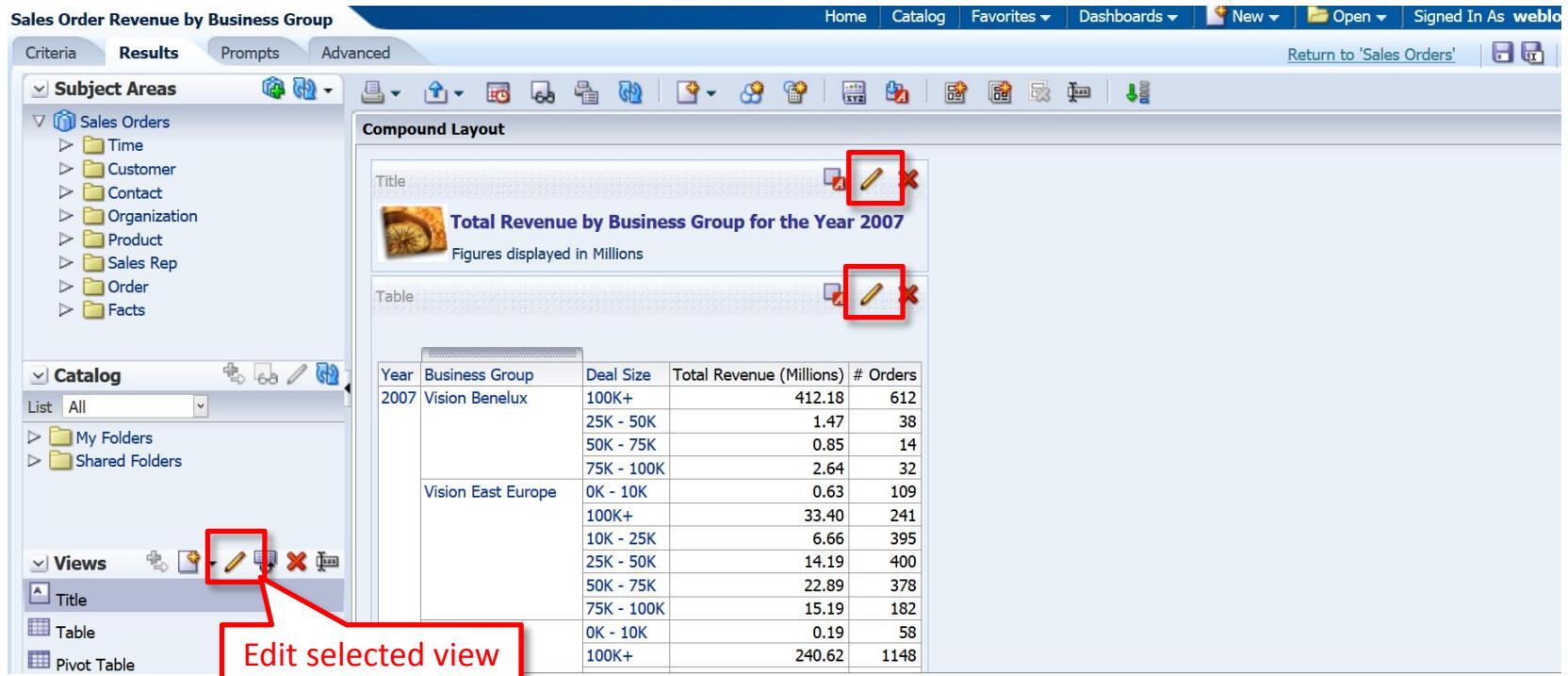
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Tables, Pivot Tables and Graphs **Common View Options**

Common View Options

Editing

- All the views can be edited by clicking on the  button



Sales Order Revenue by Business Group

Home Catalog Favorites Dashboards New Open Signed In As weblo

Criteria Results Prompts Advanced

Return to 'Sales Orders'

Subject Areas

- Sales Orders
 - Time
 - Customer
 - Contact
 - Organization
 - Product
 - Sales Rep
 - Order
 - Facts

Catalog

List All

- My Folders
- Shared Folders

Views

- Title
- Table
- Pivot Table

Compound Layout

Title: Total Revenue by Business Group for the Year 2007
Figures displayed in Millions

Table:

Year	Business Group	Deal Size	Total Revenue (Millions)	# Orders
2007	Vision Benelux	100K+	412.18	612
		25K - 50K	1.47	38
		50K - 75K	0.85	14
		75K - 100K	2.64	32
2007	Vision East Europe	OK - 10K	0.63	109
		100K+	33.40	241
		10K - 25K	6.66	395
		25K - 50K	14.19	400
		50K - 75K	22.89	378
		75K - 100K	15.19	182
		OK - 10K	0.19	58
		100K+	240.62	1148

Edit selected view

Common View Options

The View Editor

- The view editor has a consistent structure across all views:

The screenshot shows the View Editor interface with several key components highlighted by red boxes and arrows:

- "Preview" pane**: Located on the left side, it displays a table of data with columns for Year, Business Group, Deal Size, and Total Revenue.
- View properties**: A red box points to the "View Properties" icon in the toolbar above the preview pane.
- Layout**: A red box points to the "Layout" tab in the bottom navigation bar.
- Undo changes**: A red box points to the "Undo changes" button in the top right corner.
- Apply changes and return to Compound Layout**: A red box points to the "Done" button in the top right corner, which also serves as the "Revert" button.
- "Layout" pane**: A red box points to the large central area where table prompts, sections, and tables are defined.

The interface includes a toolbar at the top with various icons for file operations, and a status bar at the bottom indicating "Editing from: 'Compound Layout'".

Year	Business Group	Deal Size	Total Revenue
2007	Vision Benelux	100K+	
		25K - 50K	
		50K - 75K	0.85
		75K - 100K	2.64
	Vision East Europe	OK - 10K	0.63
	100K+	109	

Common View Options

Layout Pane

- The “**Layout**” pane will typically have 4 sections:
 - Table Prompts
 - Sections
 - Columns and Measures
 - Excluded

The screenshot shows the Layout pane with four main sections:

- Table Prompts**: A section for dragging measures, columns, and hierarchies to determine table layout. It contains a red box around the "Drop here for Table prompts" area.
- Sections**: A section for dragging items to create a sectioned table. It contains a red box around the "Drop here for a sectioned Table" area.
- Columns and Measures**: A section for dragging items to define the structure of the table. It contains a red box around the "Time", "Organization", "Order", and "Facts" headers, and their corresponding data items: "Year", "Business Group", "Deal Size", "Total Revenue (Millions)", and "# Orders".
- Excluded**: A section for dragging items to exclude them from the current table. It contains a red box around the "Drop here to exclude from this Table only" area.

Common View Options

Columns and Measures

- The “**Columns and Measures**” section defines which objects are to be included for display within the view:

The screenshot shows the 'Columns and Measures' dialog box. At the top, there are four tabs: Time, Organization, Order, and Facts. Below the tabs, five items are selected: 'Year' (with a green checkmark icon), 'Business Group' (with a blue checkmark icon), 'Deal Size' (with a blue checkmark icon), 'Total Revenue (Millions)' (with a yellow checkmark icon), and '# Orders' (with a yellow checkmark icon). A large red arrow points downwards from the dialog box to a data grid below.

Year	Business Group	Deal Size	Total Revenue (Millions)	# Orders
2007	Vision Benelux	100K+	412.18	612
		25K - 50K	1.47	38
		50K - 75K	0.85	14
		75K - 100K	2.64	32
Vision East Europe	0K - 10K	0.63	109	
	100K+	33.40	241	
	10K - 25K	6.66	395	
	25K - 50K	14.19	400	
	50K - 75K	22.89	378	
	75K - 100K	15.19	182	

Common View Options

Excluded

- Dragging objects into the “**Excluded**” section will exclude the objects completely from the view:

The screenshot shows a 'Columns and Measures' pane at the top with three items: 'Order', 'Facts', and 'Deal Size'. Below it is an 'Excluded' section containing 'Time' and 'Organization' dimensions, with 'Year' and 'Business Group' also listed. A red arrow points from the 'Excluded' section down to a table below. The table has columns for 'Deal Size' (categorical), 'Total Revenue (Millions)' (numerical), and '# Orders' (numerical). The data is summarized by deal size categories. A red callout box on the right side of the table contains the following text:

“Year” and “Business Group” are no longer displayed in the Table. Note that the results get summarised further when you remove Dimension columns from the view

Deal Size	Total Revenue (Millions)	# Orders
0K - 10K	1.09	204
100K+	714.09	2201
10K - 25K	10.67	626
25K - 50K	33.17	918
50K - 75K	47.49	789
75K - 100K	44.27	528
Grand Total	850.78	5266

Common View Options

Sections

- Dragging a Dimension into “**Sections**” will cause the view to repeat for each value returned in the Dimension column:

The screenshot illustrates the 'Sections' feature in a reporting application. On the left, a 'Sections' panel shows two dimensions: 'Organization' and 'Business Group'. A red arrow points from this panel to the right, where three separate tables are displayed, one for each business group: 'Vision Benelux', 'Vision East Europe', and 'Vision Nordics'. Each table lists deal sizes, total revenue, and the number of orders.

We now get a separate Table for each “Business Group”

Deal Size	Total Revenue (Millions)	# Orders
100K+	412.18	612
25K - 50K	1.47	38
50K - 75K	0.85	14
75K - 100K	2.64	32
Grand Total	417.15	696

Deal Size	Total Revenue (Millions)	# Orders
0K - 10K	0.63	109
100K+	33.40	241
10K - 25K	6.66	395
25K - 50K	14.19	400
50K - 75K	22.89	378
75K - 100K	15.19	182
Grand Total	92.97	1705

Deal Size	Total Revenue (Millions)	# Orders
0K - 10K	0.19	58
100K+	240.62	1148
10K - 25K	1.37	80
25K - 50K	6.99	194
50K - 75K	10.31	168
75K - 100K	15.29	181
Grand Total	274.76	1829

Common View Options

Sections: Section Properties

- The “**Section Properties**” provides a number of formatting and layout options for the Section header:

The screenshot illustrates the use of 'Section Properties' to generate three distinct reports from a single data source. On the left, the 'Sections' dialog is shown with 'Business Group' selected. A red box highlights the 'Section Properties' icon. A large red arrow points to the right, leading to three separate reports:

- Vision Benelux:** This report shows data for three deal sizes: 100K+, 25K - 50K, 50K - 75K, and 75K - 100K. It includes a 'Grand Total' row. The report title 'Vision Benelux' is highlighted with a red box.
- Vision East Europe:** This report shows data for five deal sizes: 0K - 10K, 100K+, 10K - 25K, 25K - 50K, 50K - 75K, and 75K - 100K. It includes a 'Grand Total' row.
- Vision Nordics:** This report shows data for one deal size: 0K - 10K. It includes a 'Grand Total' row.

Deal Size	Total Revenue (Millions)	# Orders
100K+	412.18	612
25K - 50K	1.47	38
50K - 75K	0.85	14
75K - 100K	2.64	32
Grand Total	417.15	696

Deal Size	Total Revenue (Millions)	# Orders
0K - 10K	0.63	109
100K+	33.40	241
10K - 25K	6.66	395
25K - 50K	14.19	400
50K - 75K	22.89	378
75K - 100K	15.19	182
Grand Total	92.97	1705

Deal Size	Total Revenue (Millions)	# Orders
0K - 10K	0.19	58

Common View Options

Sections: Aggregate

- Choosing to “Aggregate” option will give you an aggregated “All Sections” section:

The screenshot shows the 'Sections' view interface. At the top left is the 'Sections' label. Next to it is a button with a sigma symbol (Σ) and a grid icon labeled 'XYZ'. This button is highlighted with a red box and a red arrow points from it to the first table. Below the button is a dropdown menu with 'Organization' selected. Underneath the dropdown is another dropdown with 'Business Group' selected, also with a red arrow pointing to it.

Vision Benelux

All Sections		
Deal Size	Total Revenue (Millions)	# Orders
0K - 10K	1.09	204
100K+	714.09	2201
10K - 25K	10.67	626
25K - 50K	33.17	918
50K - 75K	47.49	789
75K - 100K	44.27	528
Grand Total	850.78	5266

Vision East Europe

Deal Size	Total Revenue (Millions)	# Orders
100K+	412.18	612
25K - 50K	1.47	38
50K - 75K	0.85	14
75K - 100K	2.64	32
Grand Total	417.15	696

Vision West Europe

Deal Size	Total Revenue (Millions)	# Orders
0K - 10K	0.63	109
100K+	33.40	241

A red callout box on the right side of the slide contains the text: "All Sections can appear at the top or at the bottom of the results".

Common View Options

Prompts

- Dragging a Dimension column into the “**Prompts**” section will produce a drop-down list at the top allowing you to view the results with one value at a time:

The screenshot illustrates the use of prompts in Tableau. At the top, there's a "Table Prompts" panel with two items: "Organization" and "Business Group". A red arrow points from this panel down to a dropdown menu in a table below. The dropdown menu lists several business groups: Vision East Europe, Vision Benelux, Vision East Europe (which is selected and highlighted in blue), Vision Nordics, Vision UK and Ireland, and Vision West Europe. The main table below shows data categorized by deal size and total values, with a "Business Group" column header. A red callout box with an arrow points to the dropdown menu, containing the text: "The user can choose to view one ‘Business Group’ at a time".

Business Group	Vision East Europe	Vision Benelux	Vision East Europe	Vision Nordics	Vision UK and Ireland	Vision West Europe
Deal Size	Total					
0K - 10K						
100K+						
10K - 25K						
25K - 50K						
50K - 75K						
75K - 100K						
Grand Total	92.97					1705

Common View Options

Prompts : Aggregate

- Choosing the “Aggregate” option for Prompts will allow the user to choose to see an aggregated “All Values” view of data:

The screenshot illustrates the Tableau interface for setting prompts. At the top, there is a 'Table Prompts' dialog box with two items: 'Organization' and 'Business Group'. A red box highlights the 'Business Group' icon. A large red arrow points down to a dropdown menu in a table. The table has columns 'Business Group' and 'All Values'. The 'All Values' column is currently expanded, showing five categories: 'Vision Benelux', 'Vision East Europe', 'Vision Nordics', 'Vision UK and Ireland', and 'Vision West Europe'. The 'All Values' option is highlighted with a red box. Below the table, there is a summary row: 'Grand Total' with values '850.78' and '5266'.

Business Group	All Values
Deal Size	All Values
0K - 10K	Vision Benelux
100K+	Vision East Europe
10K - 25K	Vision Nordics
25K - 50K	Vision UK and Ireland
50K - 75K	Vision West Europe
75K - 100K	
Grand Total	850.78
	5266

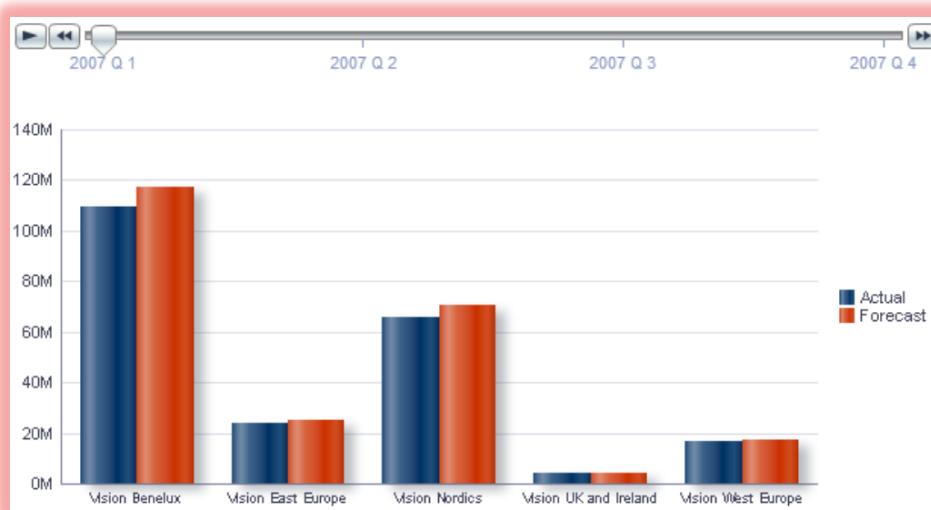
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Tables, Pivot Tables and Graphs **Important Notes**

Important Notes

Prompts and Sliders

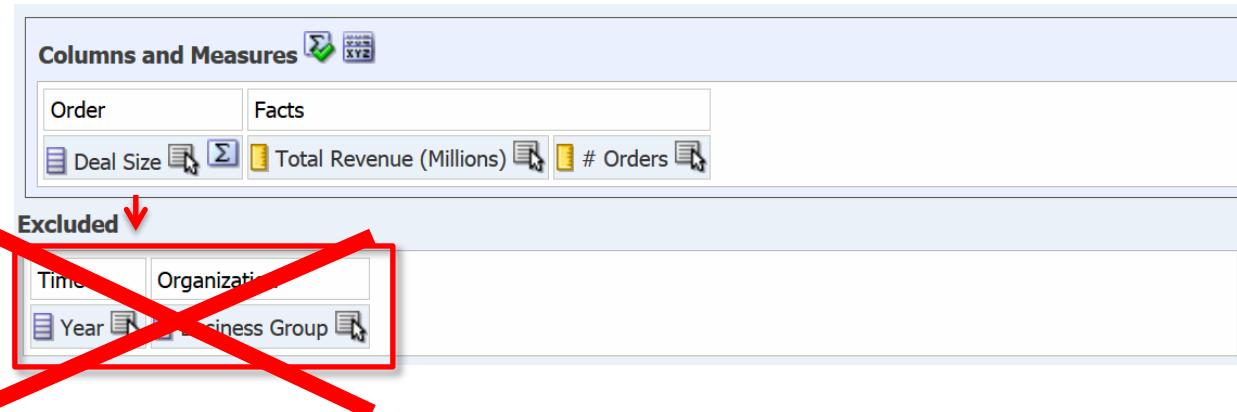
- When you use “Prompts” and “Sections”, you need to be aware that although they enable you to show a **sub-set** of data, the entire data set is still returned. For example:
 - The Slider may enable you to show one Quarter at a time, but the underlying analysis will still return data for all Quarters.
- If you want to properly filter the report for only one Quarter then you should add the appropriate “Filter” to the Analysis or use a “Dashboard Prompt”



Important Notes

Excluding Columns

- If you decide that a selection of columns are not needed in your Analysis, you should not just simply “exclude” the columns from all your views
- You should instead go to the “Criteria” tab and remove the columns completely from the Analysis
 - If you simply “exclude” the columns then the Analysis will return many more records than you actually need and the query on the database could be significantly more complex than it needs to be
 - This will impact not only your own performance but it will degrade performance for other users as well



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Tables, Pivot Tables and Graphs
Tables

Tables

Table View Editor

- The Table view editor provides options to add Grand Totals and Subtotals as well as modifying the general layout and formatting

The screenshot shows the Table View Editor interface with several red callout boxes highlighting specific features:

- A red box points to the top toolbar with the text: "Use ‘Table Properties’ to modify general options such as the number of rows per page".
- A red box points to the "Table Prompts" section with the text: "Use Table ‘Content Properties’ to change border style/colour, background colour and horiz/vertical alignment etc".
- A red box points to the "Columns and Measures" section with the text: "Add ‘Grand Total’".
- A red box points to the bottom toolbar with the text: "Add ‘Subtotal’".
- A red box points to the bottom toolbar with the text: "Rearrange the column order by dragging and dropping (this does not change the column order on the ‘Criteria’ tab)".

Quarter	Order Amount	Cost of Sales	Return Amount
2007 Q 1	219,625,779	119,371,008	7,469,436
2007 Q 2	213,137,608	114,455,730	7,122,777
2007 Q 3	218,814,199	117,474,874	7,445,088
2007 Q 4	228,677,416	123,093,662	7,435,507
Grand Total	880,255,002	474,395,273	29,472,808

Tables

Table View Editor

- Within the Table view editor, it is also possible to override some of the default column properties that were previously set on the “Criteria” tab:

The screenshot shows the 'Table View Editor' interface. At the top, there's a toolbar with tabs for 'Order' and 'Facts'. Under 'Order', three columns are listed: 'Deal Size' (with a red box around it), 'Total Revenue (Millions)', and '# Orders'. Below the toolbar are several buttons: 'Format Headings...', 'Format Values...', 'Hidden', 'New Calculated Item...', 'Aggregation Rule ▾', 'Duplicate Layer', and 'Remove Column'. A large red arrow points from the 'Format Headings...' button down to a data grid. The data grid has three columns: 'Deal Size', 'Total Revenue (Millions)', and '# Orders'. The rows show data for different deal sizes: '0K - 10K', '100K+', '10K - 25K', '25K - 50K', '50K - 75K', '75K - 100K', and 'Grand Total'. The 'Total Revenue (Millions)' column contains values like '1.09', '714.09', '10.67', etc., and the '# Orders' column contains values like '204', '2201', '626', etc.

Deal Size	Total Revenue (Millions)	# Orders
0K - 10K	1.09	204
100K+	714.09	2201
10K - 25K	10.67	626
25K - 50K	33.17	918
50K - 75K	47.49	789
75K - 100K	44.27	528
Grand Total	850.78	5266

Here we have used the
“Format Headings” and
“Format Values” options

Tables

“Hidden” option

- Note that the “Hidden” option is not the same as dragging a column to the “Excluded” section. When you *hide* a column from a table, you still get the same number of records – the results do not get summarised

The screenshot shows the 'Columns and Measures' dialog box. At the top, there are two sections: 'Order' and 'Facts'. Under 'Facts', there are three columns: 'Deal Size' (with a red arrow pointing to it), 'Total Revenue (Millions)' (with a red arrow pointing to it), and '# Orders' (with a red arrow pointing to it). Below these columns is a vertical list of options: 'Format Headings...', 'Format Values...', 'Hidden' (which is highlighted with a red box), 'New Calculated Item...', 'Aggregation Rule ▾', 'Duplicate Layer', 'Remove Column', and a table preview.

Format Headings...

Format Values...

Hidden

New Calculated Item...

Aggregation Rule ▾

Duplicate Layer

Remove Column

Total Revenue (Millions) # Orders

Total Revenue (Millions)	# Orders
1.09	204
714.09	2201
10.67	626
33.17	918
47.49	789
44.27	528
850.78	5266

Here we have **hidden** the “Deal Size” column, but the Table still shows a record for each Deal Size

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Tables, Pivot Tables and Graphs **Pivot Tables**

Pivot Tables

- The “Pivot Table” view is an extremely useful feature providing much greater flexibility than a standard “Table” view
- Pivot tables have many features such as:
 - Dimensions across two axis
 - Calculated items
 - Layers

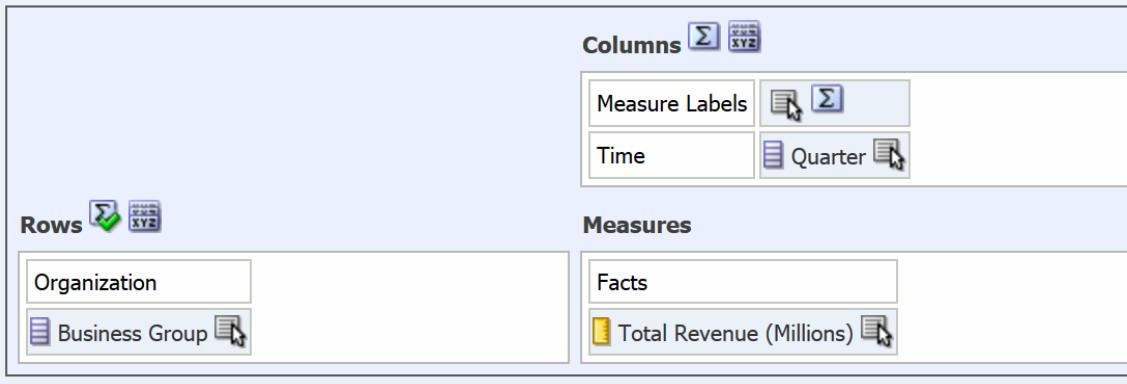
The image shows a software interface for creating visualizations. On the left, a vertical menu lists various visualization types: Best Visualization, Recommended Visualization for [dropdown], Title, Table, **Pivot Table** (which is highlighted with a red box), Performance Tile, Trellis, Graph, Gauge, Funnel, Map, Filters, Selection Steps, and Other Views. A large red arrow points from this menu to the right, where a pivot table report is displayed.

Business Group	Total Revenue (Millions)			
	2007 Q 1	2007 Q 2	2007 Q 3	2007 Q 4
Vision Benelux	105.51	99.90	105.80	105.94
Vision East Europe	23.19	24.46	21.12	24.20
Vision Nordics	63.14	67.09	70.62	73.90
Vision UK and Ireland	4.20	3.87	2.62	5.73
Vision West Europe	16.11	10.70	11.20	11.47
Grand Total	212.16	206.01	211.37	221.24

Pivot Tables

Main Components

- A Pivot Table has 3 main components:



The screenshot shows the 'PivotTable Fields' ribbon in Excel. The 'Columns' section contains 'Measure Labels' (with a dropdown arrow) and 'Time' (with a dropdown arrow). The 'Rows' section contains 'Organization' and 'Business Group'. The 'Measures' section contains 'Facts' (with a dropdown arrow) and 'Total Revenue (Millions)' (with a dropdown arrow).

Total Revenue (Millions)				
	2007 Q 1	2007 Q 2	2007 Q 3	2007 Q 4
Business Group				
Vision Benelux	105.51	99.90	105.80	105.94
Vision East Europe	23.19	24.46	21.12	24.20
Vision Nordics	63.14	67.09	70.62	73.90
Vision UK and Ireland	4.20	3.87	2.62	5.73
Vision West Europe	16.11	10.70	11.20	11.47
Grand Total	212.16	206.01	211.37	221.24

Annotations with red boxes and arrows point to the table structure:

- A red box labeled 'Rows' points to the first column of the table.
- A red box labeled 'Columns' points to the first row of the table.
- A red box labeled 'Measures' points to the last row of the table.

Pivot Tables

Rows

- Within the “**Rows**” section, you can list multiple columns to appear on the left-hand side of the Pivot Table, they will get treated as Dimensions
- Additional settings include:
 - Grand Total
 - Formatting Options (e.g. Column Header, Values)
 - Subtotal

The diagram illustrates the configuration of a Pivot Table's 'Rows' section and its resulting output. On the left, a screenshot of the 'Rows' section settings shows three columns selected: 'Time', 'Organization', and 'Business Group'. Red callouts point to the 'Grand total' button, 'Formatting Options' button, and 'Subtotal' button. A large red arrow points from this section to the right, where the resulting Pivot Table is displayed.

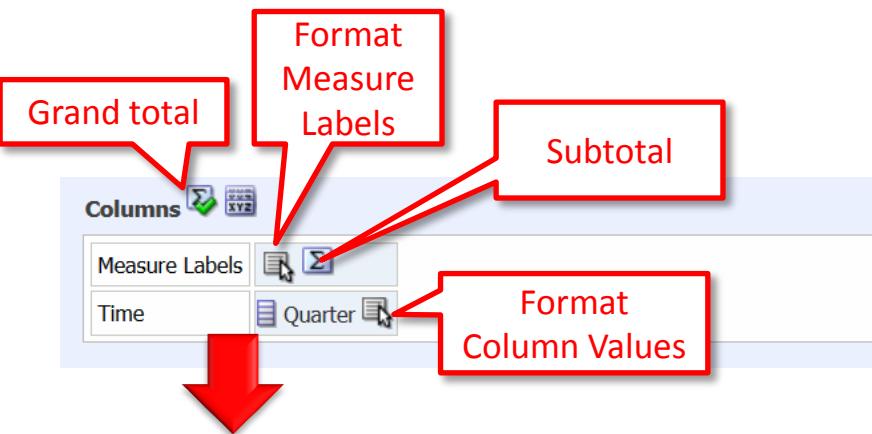
Total Revenue (Millions)					
Year	Business Group	2007 Q	2007 Q	2007 Q	2007 Q
2007	Vision Benelux	105.51	99.90	105.80	105.94
	Vision East Europe	23.19	24.46	21.12	24.20
	Vision Nordics	63.14	67.09	70.62	73.90
	Vision UK and Ireland	4.20	3.87	2.62	5.73
	Vision West Europe	16.11	10.70	11.20	11.47
Grand Total	212.16	206.01	211.37	221.24	

A red callout on the bottom right points to the 'Grand Total' value in the Pivot Table, labeled "The ‘Rows’ grand total".

Pivot Tables

Columns

- By default, the “**Columns**” area will contain the “**Measure Labels**”
- You can also place in there one or more other Dimension columns
- Additional settings include:
 - Grand Total
 - Subtotal
 - Format Measure Labels
 - Format Column Values



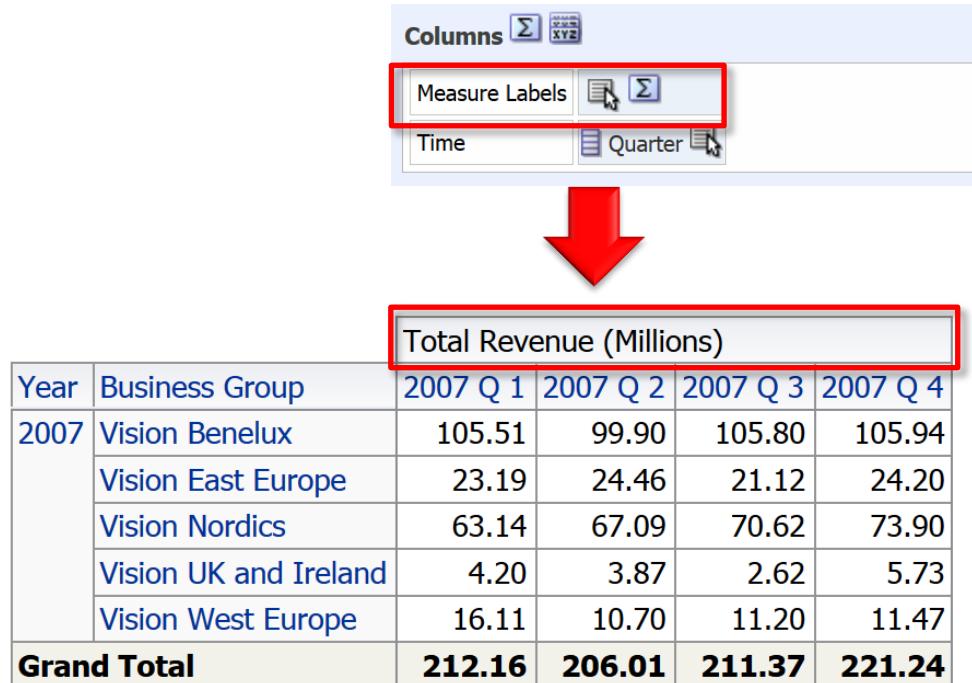
Year	Business Group	Total Revenue (Millions)				Total Revenue (Millions)
		2007 Q 1	2007 Q 2	2007 Q 3	2007 Q 4	
2007	Vision Benelux	105.51	99.90	105.80	105.94	417.15
	Vision East Europe	23.19	24.46	21.12	24.20	92.97
	Vision Nordics	63.14	67.09	70.62	73.90	274.76
	Vision UK and Ireland	4.20	3.87	2.62	5.73	16.42
	Vision West Europe	16.11	10.70	11.20	11.47	49.48
Grand Total		212.16	206.01	211.37	221.24	850.78

The “Columns” grand total

Pivot Tables

Measure Labels

- The “**Measure Labels**” can appear in various places
- In example below, they are placed above the “Quarter” column:



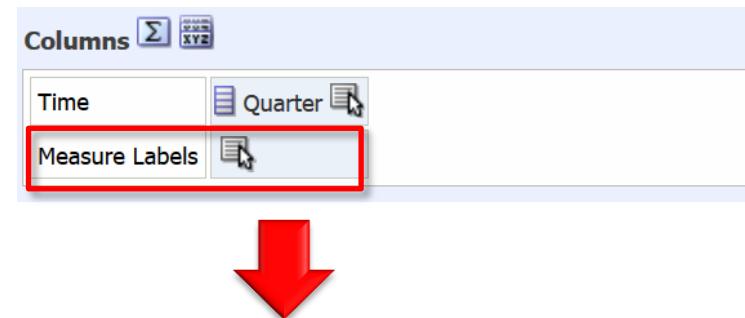
The screenshot shows the 'Columns' pane of a Pivot Table setup. The 'Measure Labels' button is highlighted with a red box. Below it, the 'Time' field is selected, and the 'Quarter' field is shown with a mouse cursor over it. A large red arrow points downwards from the 'Columns' pane to the resulting Pivot Table below.

Year	Business Group	2007 Q 1	2007 Q 2	2007 Q 3	2007 Q 4
2007	Vision Benelux	105.51	99.90	105.80	105.94
	Vision East Europe	23.19	24.46	21.12	24.20
	Vision Nordics	63.14	67.09	70.62	73.90
	Vision UK and Ireland	4.20	3.87	2.62	5.73
	Vision West Europe	16.11	10.70	11.20	11.47
Grand Total		212.16	206.01	211.37	221.24

Pivot Tables

Measure Labels

- However, you could drag the Measure Labels underneath the Dimension columns:



		2007 Q 1	2007 Q 2	2007 Q 3	2007 Q 4
Year	Business Group	Total Revenue	Total Revenue	Total Revenue	Total Revenue
2007	Vision Benelux	105.51	99.90	105.80	105.94
	Vision East Europe	23.19	24.46	21.12	24.20
	Vision Nordics	63.14	67.09	70.62	73.90
	Vision UK and Ireland	4.20	3.87	2.62	5.73
	Vision West Europe	16.11	10.70	11.20	11.47
Grand Total		212.16	206.01	211.37	221.24

Pivot Tables

Measure Labels

- And you could even drag the Measure Labels into the “Rows” section!

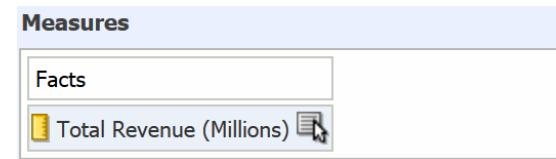
The image shows a Microsoft Excel Pivot Table setup and its resulting report. In the top section, titled 'Pivot Table' (with a 'XYZ' icon), there are three main sections: 'Rows', 'Columns', and 'Measures'. The 'Rows' section contains 'Measure Labels' (highlighted with a red box and arrow) and 'Time' (Organization, Year, Business Group). The 'Columns' section contains 'Time' and 'Quarter'. The 'Measures' section contains 'Facts' and 'Total Revenue (Millions)'. A large red arrow points from the 'Measure Labels' row in the Pivot Table setup down to the corresponding row in the generated report below.

	Year	Business Group	2007 Q 1	2007 Q 2	2007 Q 3	2007 Q 4
2007	Vision Benelux	105.51	99.90	105.80	105.94	
	Vision East Europe	23.19	24.46	21.12	24.20	
	Vision Nordics	63.14	67.09	70.62	73.90	
	Vision UK and Ireland	4.20	3.87	2.62	5.73	
	Vision West Europe	16.11	10.70	11.20	11.47	
Total Revenue (Millions)		212.16	206.01	211.37	221.24	

Pivot Tables

Measures

- The “Measures” area determines which fact/measure columns will be displayed in the Pivot Table
- Multiple measure columns can be included
- The requirement is that any column in the “Measures” area must have an aggregation rule assigned

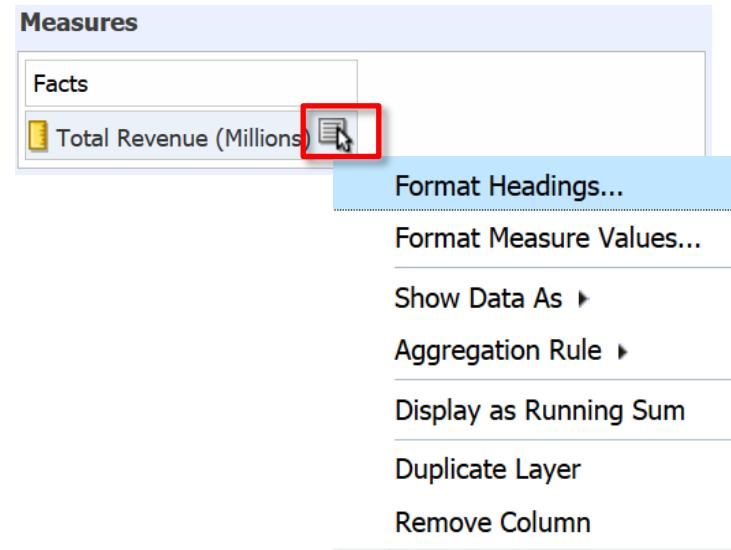


Business Group	Total Revenue (Millions)			
	2007 Q 1	2007 Q 2	2007 Q 3	2007 Q 4
Vision Benelux	105.51	99.90	105.80	105.94
Vision East Europe	23.19	24.46	21.12	24.20
Vision Nordics	63.14	67.09	70.62	73.90
Vision UK and Ireland	4.20	3.87	2.62	5.73
Vision West Europe	16.11	10.70	11.20	11.47
Grand Total	212.16	206.01	211.37	221.24

Pivot Tables

Measures

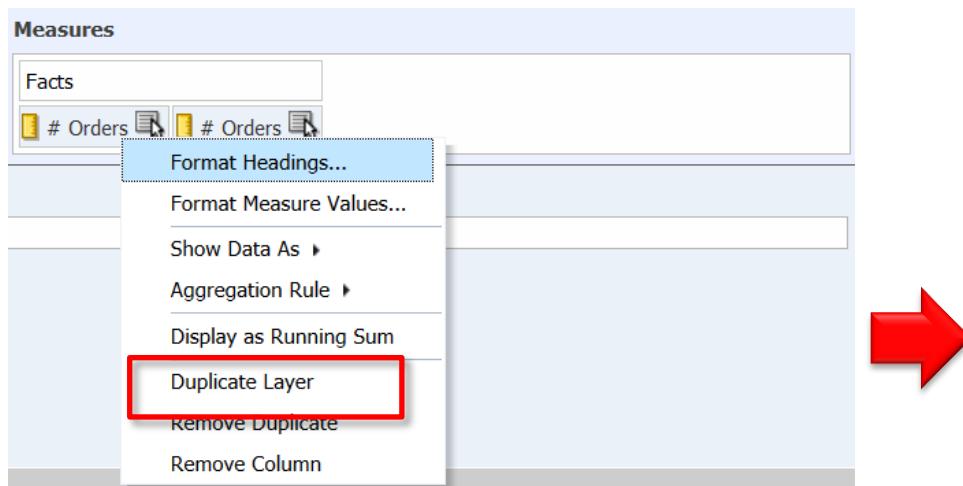
- Several options exist for measures including:
 - Formatting headings and measure values
 - Specifying an aggregation rule
 - Showing data as a percentage or index
 - Displaying data as a running sum
 - Duplicating layers



Pivot Tables

Duplicate Layers

- The “Duplicate Layers” option is a good way to show the same data in an alternative format (e.g. a percentage or as a running sum)
- This option will add the same measure column again to the Pivot Table, you can then give it a new heading and configure its values
 - NOTE: Adding a new layer to the Pivot Table does not cause additional load on the underlying database, since all the calculations are performed once the data has been retrieved from the database



"# Orders" has been duplicated

Quarter	# Orders	# Orders
2007 Q 1	1298	1298
2007 Q 2	1346	1346
2007 Q 3	1280	1280
2007 Q 4	1342	1342
Grand Total	5266	5266

Pivot Tables

Display as Running Sum

- Once the “# Orders” layer has been duplicated, you could implement a “Year-to-Date” calculations:
 - Rename the column heading to “YTD # Orders”
 - Choose the option “Display as Running Sum”

The screenshot shows a 'Measures' pane on the left and a Pivot Table on the right. In the Measures pane, there are two measures: '# Orders' and 'YTD # Orders'. A red box highlights the 'Display as Running Sum' option in the context menu, which is open over the 'YTD # Orders' measure. A large red arrow points from the 'Display as Running Sum' option to the resulting Pivot Table on the right. The Pivot Table has 'Quarter' in the first column and two columns for '# Orders' and 'YTD # Orders'. The 'YTD # Orders' column is highlighted with a red border. The data shows cumulative values for each quarter: Q1: 1298, Q2: 2644, Q3: 3924, Q4: 5266. The Grand Total row also shows 5266 for both columns.

Quarter	# Orders	YTD # Orders
2007 Q 1	1298	1298
2007 Q 2	1346	2644
2007 Q 3	1280	3924
2007 Q 4	1342	5266
Grand Total	5266	5266

Pivot Tables

Show Data As

- As another example, you can use the “**Show Data As**” option to display data as a percentage of the column’s total value
 - In the example below, the “# Orders” column has been duplicated and the new layer has been configured to act as a “% Yearly Total” calculation showing how the “# Orders” in each quarter contributes to the overall total

The screenshot shows a Pivot Table interface with a context menu open over a measure named "% Yearly Total". The menu is titled "Values" and includes options like "Format Headings...", "Format Measure Values...", "Show Data As >" (which is highlighted with a red box), "Aggregation Rule >", "Display as Running Sum", "Duplicate Layer", "Remove Duplicate", and "Remove Column". Under "Show Data As > ", there are two checked options: "Percent of >" and "Column". A red box highlights the "Column" option. To the right of the menu, a large red arrow points down to a table.

Quarter	# Orders	YTD # Orders	% Yearly Total
2007 Q 1	1298	1298	24.6%
2007 Q 2	1346	2644	25.6%
2007 Q 3	1280	3924	24.3%
2007 Q 4	1342	5266	25.5%
Grand Total	5266	5266	100.0%

Pivot Tables

Calculated Items

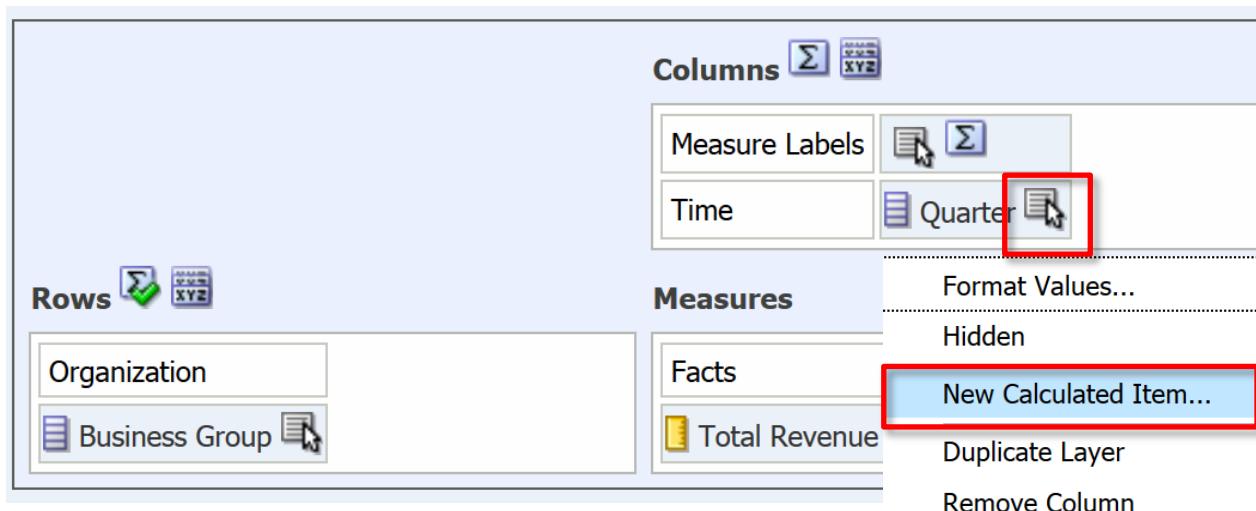
- “Calculated Items” are a convenient way to add additional layers of calculation to your pivot tables
- These additional calculations are performed once all the data has been fetched from the underlying database, so they do not impact database performance
- In the example below, calculated items have been added to:
 - Summarise the Quarterly data in to half-years “H1” and “H2”
 - Categorise the Business Groups in to “West Europe” and “East Europe”

Business Group	# Orders					
	2007 Q 1	2007 Q 2	2007 Q 3	2007 Q 4	H1	H2
Vision Benelux	174	174	174	174	348	348
Vision East Europe	426	454	399	426	880	880
Vision Nordics	428	464	473	464	892	892
Vision UK and Ireland	78	80	52	104	158	158
Vision West Europe	192	174	182	174	366	366
West Europe	444	428	408	452	872	872
East Europe	854	918	872	890	1772	1772
Grand Total	1298	1346	1280	1342	2644	2644

Pivot Tables

Calculated Items

- To create a calculated item for a dimension column:
 - Click on the “More options” button for the dimension column
 - Choose “New Calculated Item”



- NOTE: Calculated Items will always be added to the end of the Pivot Table

Pivot Tables

Implicit Column References

- You can use the “\$n” syntax to implicitly reference columns on the pivot table
- In the example below, we have specified the formula “\$1 + \$2” which will summarise measure columns 1 and 2 from the Pivot Table

The screenshot shows the 'New Calculated Item' dialog box and a Pivot Table.

New Calculated Item Dialog:

- Display Label: H1
- Values From: Time.Quarter
- Function: Custom Formula
- Available: Time.Quarter (with items: 1979 Q 4, 1980 Q 1, 1980 Q 2)
- Selected: \$1+\$2 (highlighted with a red box)

Pivot Table:

Total Revenue (Millions)

	2007 Q 1	2007 Q 2	2007 Q 3	2007 Q 4	H1
Business Group	105.51	99.90	105.80	105.94	205.41
Vision Benelux	23.19	24.46	21.12	24.20	47.65
Vision Nordics	63.14	67.09	70.62	73.90	130.24
Vision UK and Ireland	4.20	3.87	2.62	5.73	8.06
Vision West Europe	16.11	10.70	11.20	11.47	26.81
Grand Total	212.16	206.01	211.37	221.24	418.17

A red box highlights the formula '\$1+\$2' in the dialog box, and red arrows point from this formula to the corresponding columns in the Pivot Table.

Pivot Tables

Explicit Column References

- You can also define formulas by making explicit references to column values
- In the example below, the “West Europe” Calculated Item summarises data by explicitly referencing 3 column values:
 - “Vision Benelux” + “Vision UK and Ireland” + “Vision West Europe”

The screenshot shows a 'New Calculated Item' dialog box. The 'Display Label' is set to 'West Europe'. The 'Values From' dropdown is set to 'Organization.Business Group'. The 'Function' is set to 'Sum'. On the left, under 'Available', there is a tree view of 'Organization.Business Group' with nodes for 'Vision Benelux', 'Vision East Europe', 'Vision Nordics', 'Vision UK and Ireland', and 'Vision West Europe'. The 'Vision Benelux', 'Vision UK and Ireland', and 'Vision West Europe' nodes are selected and highlighted with a red border. A large red arrow points from this dialog to a pivot table on the right.

Business Group	Total Revenue (Millions)			
	2007 Q 1	2007 Q 2	2007 Q 3	2007 Q 4
Vision Benelux	105.51	99.90	105.80	105.94
Vision East Europe	23.19	24.46	21.12	24.20
Vision Nordics	63.14	67.09	70.62	73.90
Vision UK and Ireland	4.20	3.87	2.62	5.73
Vision West Europe	16.11	10.70	11.20	11.47
West Europe	125.82	114.46	119.63	123.14
Grand Total	212.16	206.01	211.37	221.24

Pivot Tables

Further Notes

- Pivot Tables are excellent features but they can lead to performance issues if they are not used sensibly:
 - It takes a lot of processing overhead to summarise a table of results and transform them into a Pivot Table
 - The more records and columns in your data set, the longer it will take to render a Pivot Table (the time increases exponentially)
- Before you add a Pivot Table to your request you should first review all the results in a standard “Table” view so that you can:
 - Remove any columns that are not actually needed
 - Validate all the metrics before they are rendered in a Pivot Table

PEAK
indicators

Tables, Pivot Tables and Graphs
Table and Pivot Table Interactions

Table and Pivot Table Interactions

- Oracle BI provides users with an excellent “drag ‘n drop” capability to allow the moving and swapping of columns and also to apply sort orders
 - This capability is available within Answers and also on the Dashboards



Total Revenue (Millions)							
Business Group	2001	2002	2003	2004	2005	2006	2007
Vision Benelux	222.51	399.48	415.28	422.36	471.47	387.98	417.15
Vision East Europe	48.77	75.29	98.24	90.99	93.59	94.28	92.97
Vision Nordics	86.48	57.50	56.67	261.17	268.71	267.73	274.76
Vision UK and Ireland	8.18	4.19	16.85	17.33	17.70	39.46	16.42
Vision West Europe	72.07	74.08	369.93	116.65	106.25	75.57	49.48
Grand Total	438.02	610.54	956.96	908.50	957.73	865.02	850.78

Table and Pivot Table Interactions

Moving Columns

When you move the mouse over a Table Column Heading, a bar will appear allowing you to drag the Column to another location in the Table.

Note also that there are sort “up” and “down” buttons as well



Year	Business Group	Total Revenue
2001	Vision Benelux	222.51
	Vision East Europe	48.77
	Vision Nordics	86.48
	Vision UK and Ireland	8.18
	Vision West Europe	72.07
2002	Vision Benelux	399.48
	Vision East Europe	75.29
	Vision Nordics	57.50
	Vision UK and Ireland	4.19
	Vision West Europe	74.08
2003	Vision Benelux	415.28
	Vision East Europe	98.24
	Vision Nordics	56.67
	Vision UK and Ireland	16.85
	Vision West Europe	369.93
2004	Vision Benelux	422.36
	Vision East Europe	90.99
	Vision Nordics	261.17
	Vision UK and Ireland	17.33
	Vision West Europe	116.65
2005	Vision Benelux	471.47
	Vision East Europe	93.59
	Vision Nordics	269.71

Table and Pivot Table Interactions

Dragging Columns to Section/Prompts

Users can even drag Columns to form “Table Section” and “Table Prompts” areas!



A screenshot of a table titled "Table Prompts". The table has three columns: "Year", "Business Group", and "Total Revenue (Millions)". The data rows are: 2001 (Vision Benelux, 222.51), Vision East Europe (48.77), Vision Nordics (86.48), Vision UK and Ireland (8.18), Vision West Europe (72.07), and 2002 (Vision Benelux, 399.48). The first column, "Year", is highlighted with a red box.

Year	Business Group	Total Revenue (Millions)
2001	Vision Benelux	222.51
	Vision East Europe	48.77
	Vision Nordics	86.48
	Vision UK and Ireland	8.18
	Vision West Europe	72.07
2002	Vision Benelux	399.48



A screenshot of the same table after dragging the "Year" column to the "Table Prompts" area. The "Year" column is now a separate column on the far left, and the original "Year" column header is now part of the "Business Group" column. The data rows remain the same: 2001 (Vision Benelux, 222.51), Vision East Europe (48.77), Vision Nordics (86.48), Vision UK and Ireland (8.18), Vision West Europe (72.07), and 2002 (Vision Benelux, 399.48).

Year	Business Group	Total Revenue (Millions)
2001	Vision Benelux	222.51
	Vision East Europe	48.77
	Vision Nordics	86.48
	Vision UK and Ireland	8.18
	Vision West Europe	72.07
2002	Vision Benelux	399.48

Table and Pivot Table Interactions

Excluding Columns

Right-mouse clicking on a Column Heading will display a menu giving you similar functions.

But note there are even options to “Drill” and “Exclude Column”

Year	Business Group	Total Revenue (Millions)
2001	Sort Column	222.51
	Drill	48.77
	Keep Only	86.48
	Remove	8.18
2002	Add Members...	72.07
	Add Custom Calculated Item...	399.48
	Show Subtotal	75.29
	Show Row level Grand Total	57.50
2003	Exclude column	4.19
	Hide Column	74.08
	Move Column	415.28
	Right	98.24
	To Prompts	56.67
2004	Vision Benelux	16.85
	Vision East Europe	
	Vision Nordics	
	Vision UK and Ireland	17.33
	Vision West Europe	116.65
2005	Vision Benelux	471.47

Table and Pivot Table Interactions

Pivot Tables

Business Group	Year	Total Revenue (Millions)					
		2001	2002	2003	2004	2005	2006
Vision Benelux		222.51	399.48	415.28	422.36	471.47	387.98
Vision East Europe		48.77	75.29	98.24	90.99	93.59	94.28
Vision Nordics		86.48	57.50	56.67	261.17	268.71	267.73
Vision UK and Ireland		8.18	4.19	16.85	17.33	17.70	39.46
Vision West Europe		72.07	74.08	369.93	116.65	106.25	49.48

Year	Business Group	Total Revenue (Millions)
2001	Vision Benelux	222.51
	Vision East Europe	48.77
	Vision Nordics	86.48
	Vision UK and Ireland	8.18
	Vision West Europe	72.07
2002	Vision Benelux	399.48
	Vision East Europe	75.29
	Vision Nordics	57.50
	Vision UK and Ireland	4.19
	Vision West Europe	74.08
2003	Vision Benelux	415.28
	Vision East Europe	98.24
	Vision Nordics	56.67
	Vision UK and Ireland	16.85
	Vision West Europe	369.93
2004	Vision Benelux	422.36
	Vision East Europe	90.99
	Vision Nordics	261.17
	Vision UK and Ireland	17.33
	Vision West Europe	116.65
2005	Vision Benelux	471.47
	Vision East Europe	93.59
	Vision Nordics	268.71
	Vision UK and Ireland	17.70

The same range of options are available for Pivot Tables, but you get the additional option to drag columns to an alternative axis

Table and Pivot Table Interactions

Swapping Columns

Business Group	Year	Total Revenue (Millions)					
		2001	2002	2003	2004	2005	2006
Vision Benelux		222.51	399.48	415.28	422.36	471.47	387.98
Vision East Europe		48.77	75.29	98.24	90.99	93.59	94.28
Vision Nordics		86.48	57.50	56.67	261.17	268.71	267.73
Vision UK and Ireland		8.18	4.19	16.85	17.33	17.70	39.46
Vision West Europe		72.07	74.08	369.93	116.65	106.25	49.48



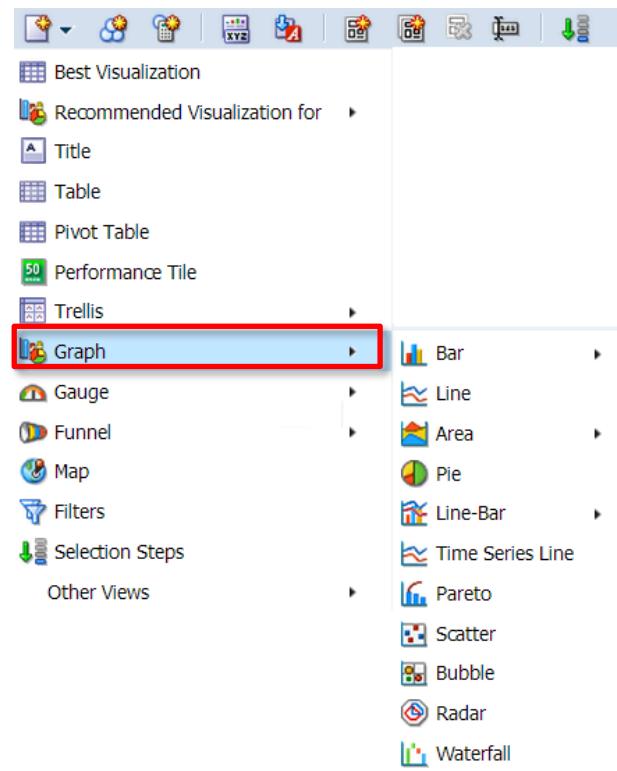
Year	Total Revenue (Millions)				
	Vision Benelux	Vision East Europe	Vision Nordics	Vision UK and Ireland	Vision West Europe
2001	222.51	48.77	86.48	8.18	72.07
2002	399.48	75.29	57.50	4.19	74.08
2003	415.28	98.24	56.67	16.85	369.93
2004	422.36	90.99	261.17	17.33	116.65
2005	471.47	93.59	268.71	17.70	106.25
2006	387.98	94.28	267.73	39.46	75.57
2007	417.15	92.97	274.76	16.42	49.48

PEAK
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Tables, Pivot Tables and Graphs **Graphs**

Graphs

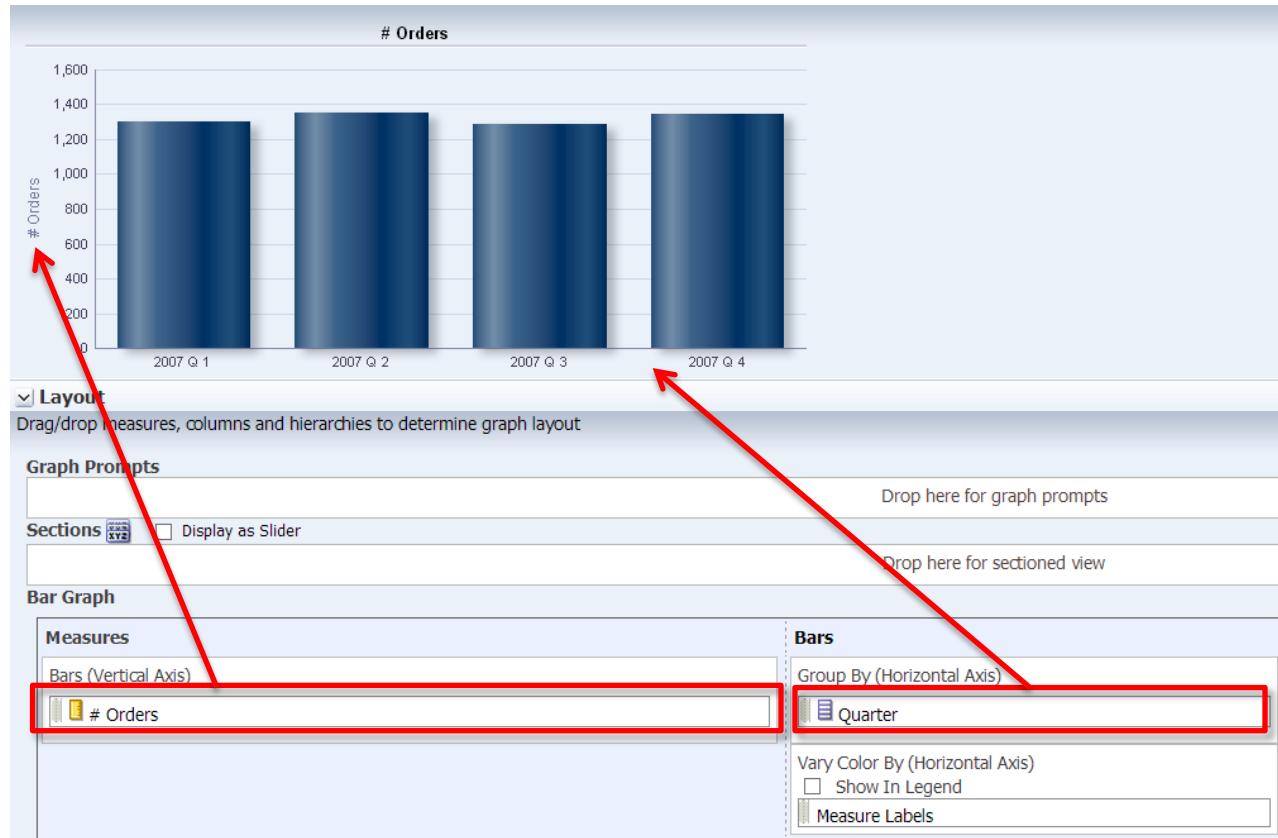
- OBIEE provides many types of Graph to support a wide variety of reporting requirements
- We will now take a look at the most common charting styles and options available



Graphs

Common Settings

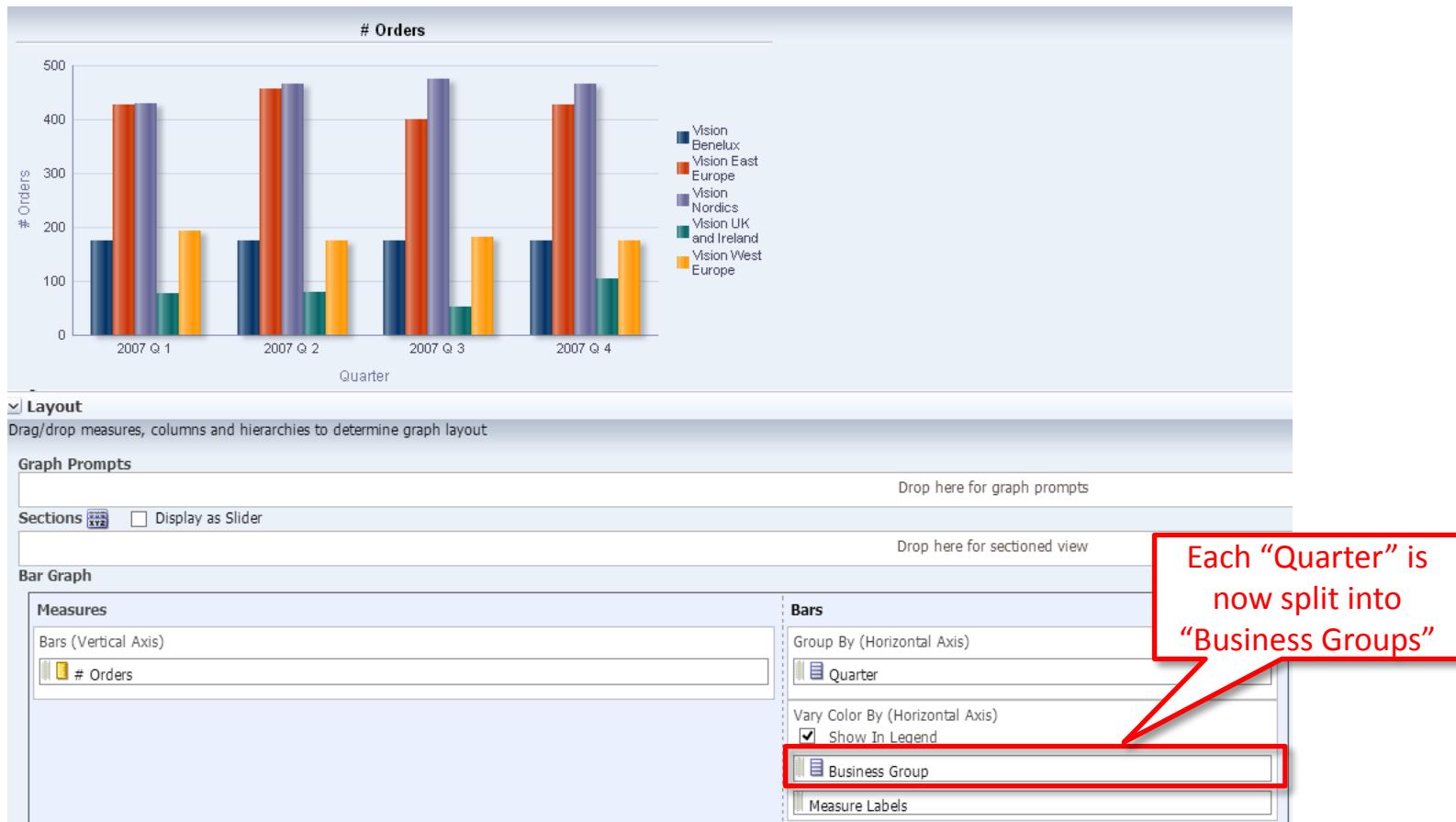
- With Graphs, you start by choosing at least one Measure and also at least one Dimension to “group by”:



Graphs

Common Settings

- You can then also choose another Dimension to slice the data (using the “Vary Color By” option):



Graphs

Common Settings

- The “Sections” and “Prompts” options work for Graphs as well!

Layout
Drag/drop measures, columns and hierarchies to determine graph layout

Graph Prompts

Sections Display as Slider

Quarter

Drop here for graph prompts

Bar Graph

Measures

Quarter: 2007 Q 2

Quarter: 2007 Q 3

Quarter: 2007 Q 4

Business Group

Bars

Group By (Horizontal Axis)

Business Group

Vary Color By (Horizontal Axis)

Show In Legend

Measure Labels

Sample

Forecast Actual

Business Group

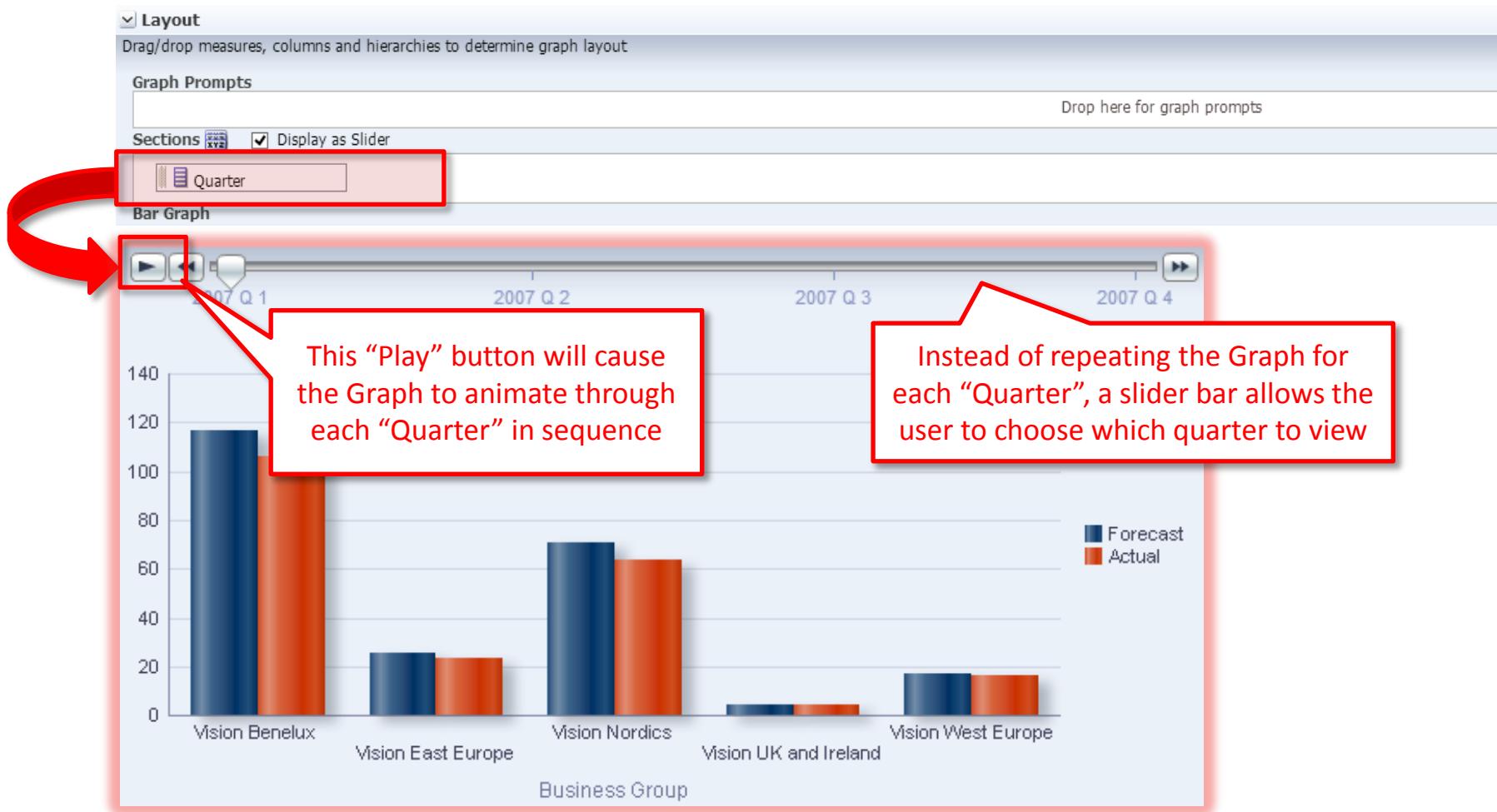
Show Subject Area Folders



Graphs

Section Sliders

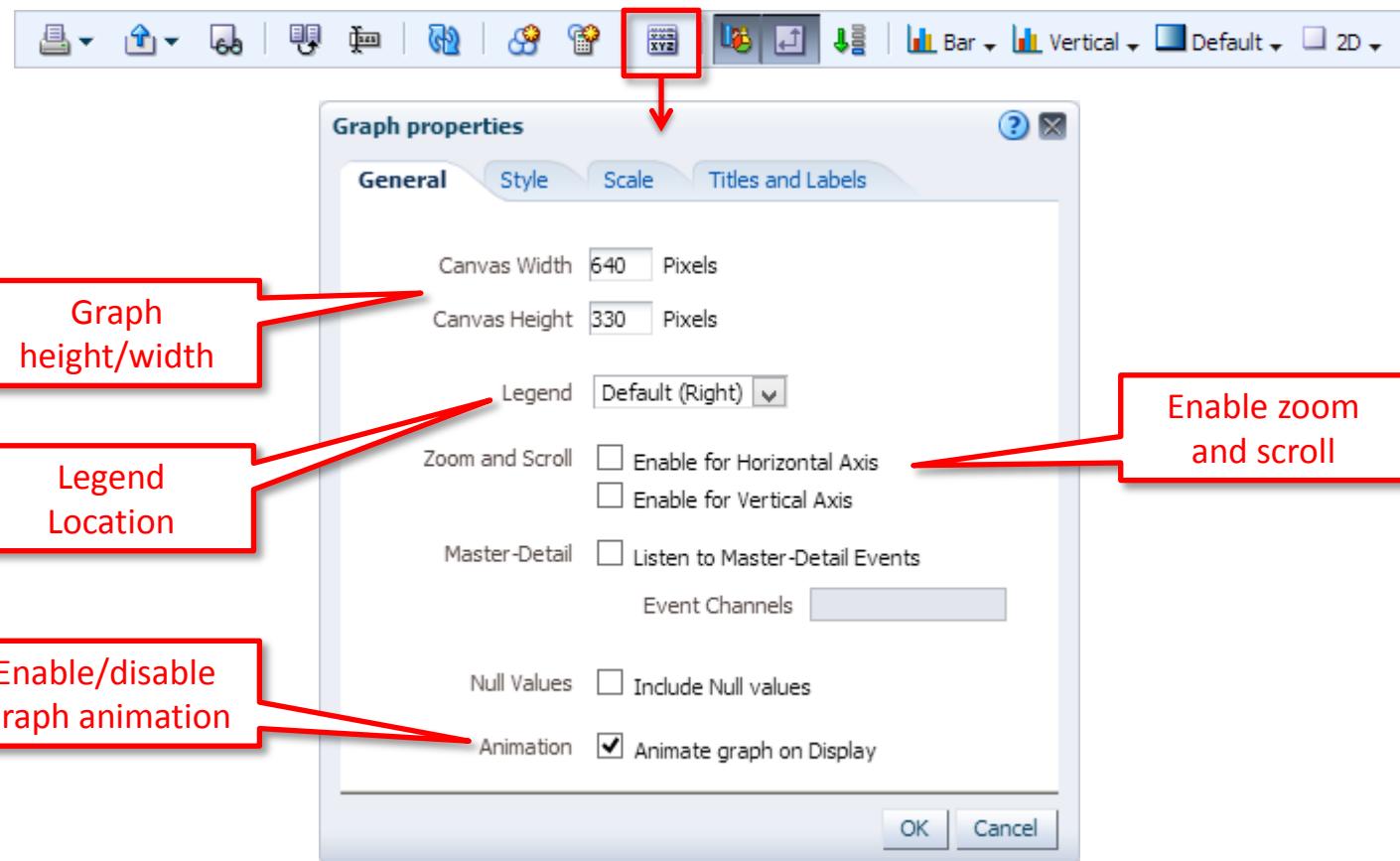
- Graphs also come with a “**Display as Slider**” option for Sections!



Graphs

Graph Properties: General

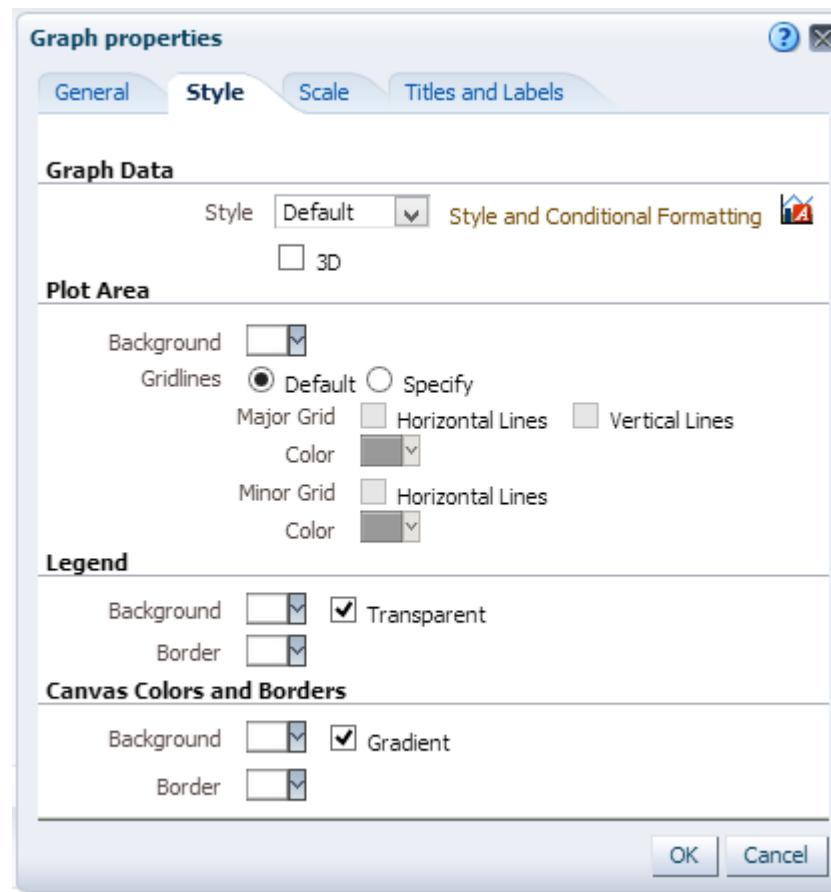
- The “Graph Properties” button  provides access to four tabs of additional settings



Graphs

Graph Properties: Style

- The “**Style**” tab allows you to override the default colouring across the various Graph areas:

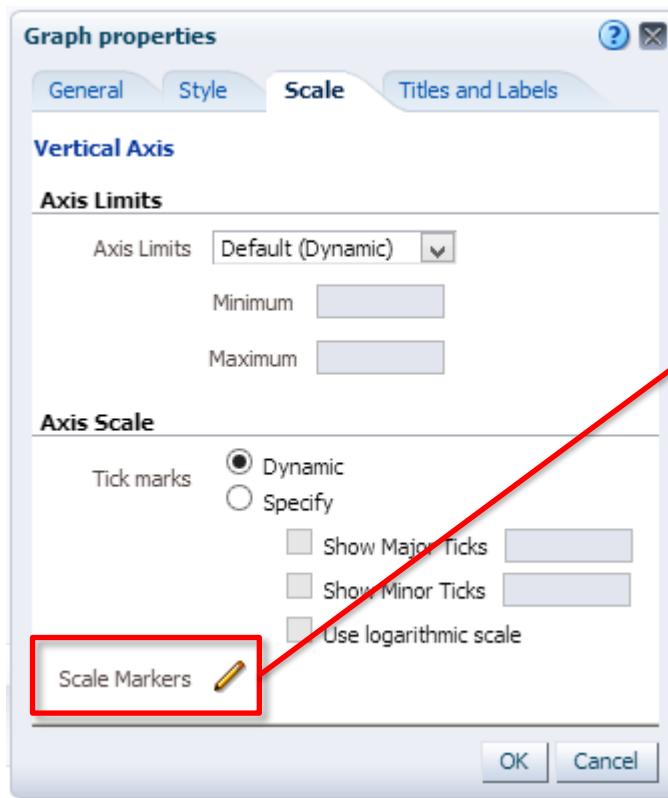


Override default
colouring for the
Graph data

Graphs

Graph Properties: Scale

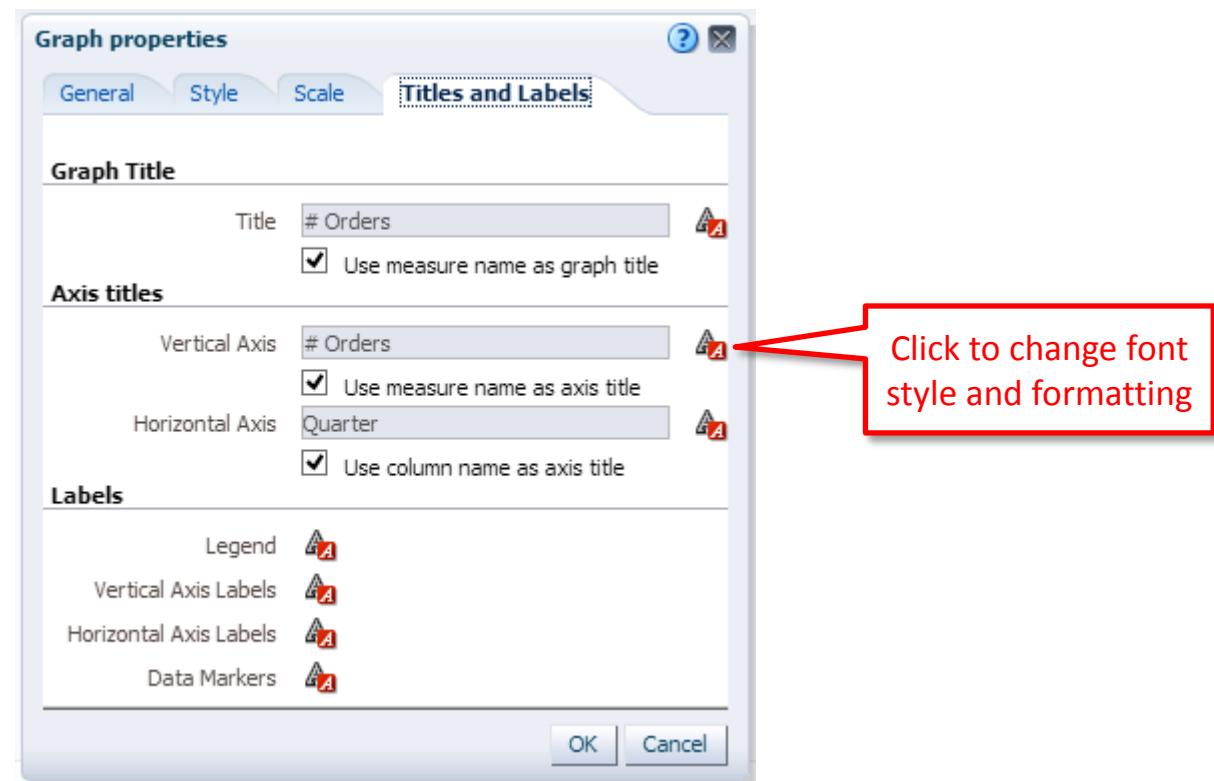
- The “Scale” tab is where you can configure the axis limits and tick marks
- There is also a very useful “Scale Markers” feature which allows you to dynamically plot target markers onto the Graph



Graphs

Graph Properties: Titles and Labels

- As the name suggests, “Titles and Labels” is where you can configure the various text elements of the Graph:



PEAK
indicators

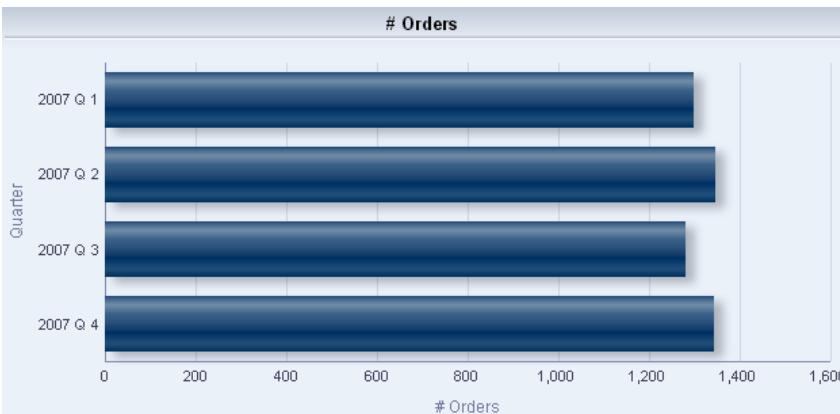
Tables, Pivot Tables and Graphs

Common Graph Types

Common Graph Types

Bar Graphs

- Horizontal and Vertical “Bar” graphs are available:



Common Graph Types

Bar Graphs

- You also have an option to display the bars in 3D rendered with different shapes:



This is the default
"Gradient" style in 3D

Common Graph Types

Bar Graphs

- When you are varying the colour by a Dimension, you have the choice between “stacked” and “non-stacked”:

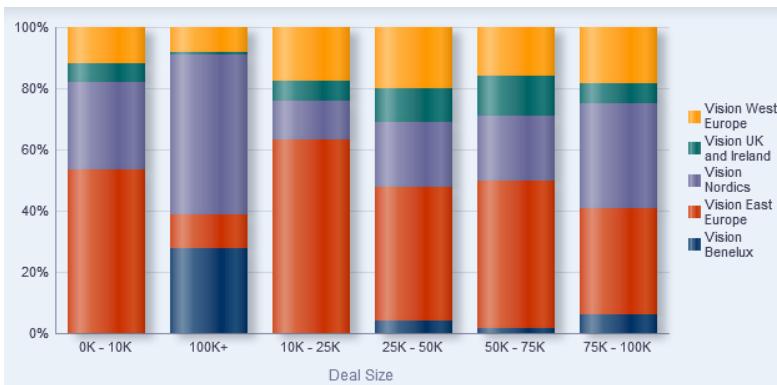


Common Graph Types

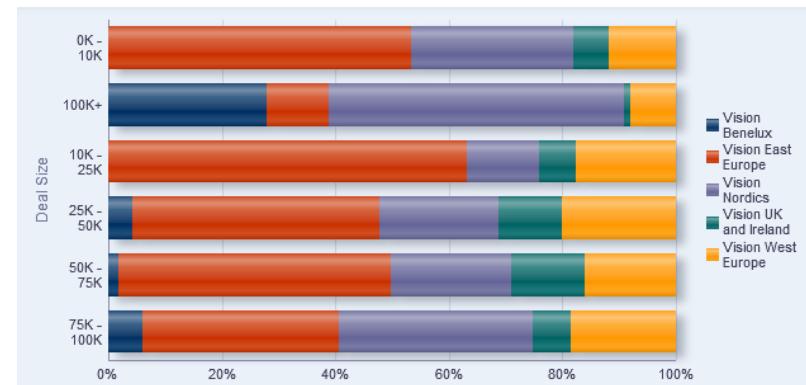
Bar Graphs

- There are also “100% Stacked” variations which percentage weightings instead of their absolute values:

Bar ▾ 100% Stacked Vertical ▾ Default ▾ 2D ▾



Bar ▾ 100% Stacked Horizontal ▾ Default ▾ 2D ▾



Common Graph Types

Pie Graphs

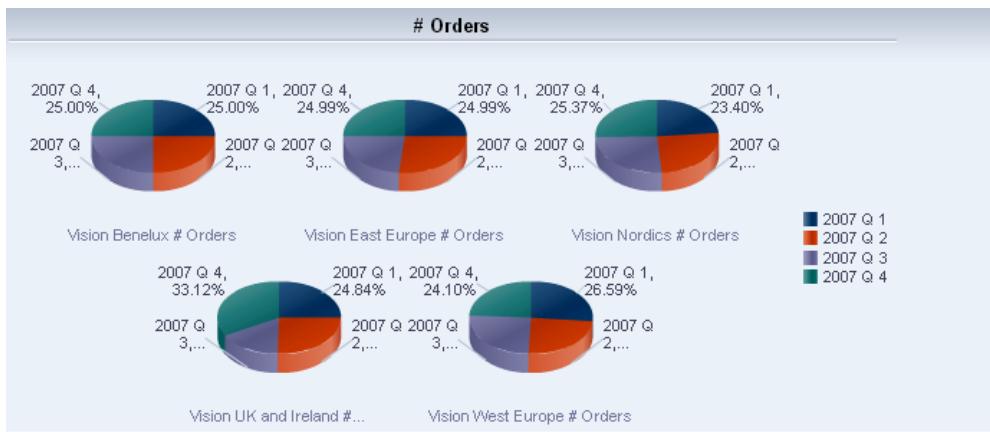
- A “**Pie**” is another commonly used graph, available in 2D and 3D versions
- Options allow you to:
 - Display percentages or values
 - Show just values or the name of the slice as well



Common Graph Types

Pie Graphs

- Pie graphs also have a nice new feature where you can split up a single pie in to multiple ones based on a Dimension:



Layout

Measures

Slice Size
Orders

Pies and Slices

Pies
Business Group

Measure Labels

Slices
Show In Legend

Quarter

By dragging “Business Group” into the “Pies” section, we will see a separate pie for each “Business Group”

Common Graph Types

Line Graphs

- “**Line**” graphs are particularly useful for time-based charting
- As with bar charts, you can display multiple measures on a line chart, or choose to have a number of lines based upon another dimension
- Lines can be 2D or 3D



Common Graph Types

Line Bar Combo

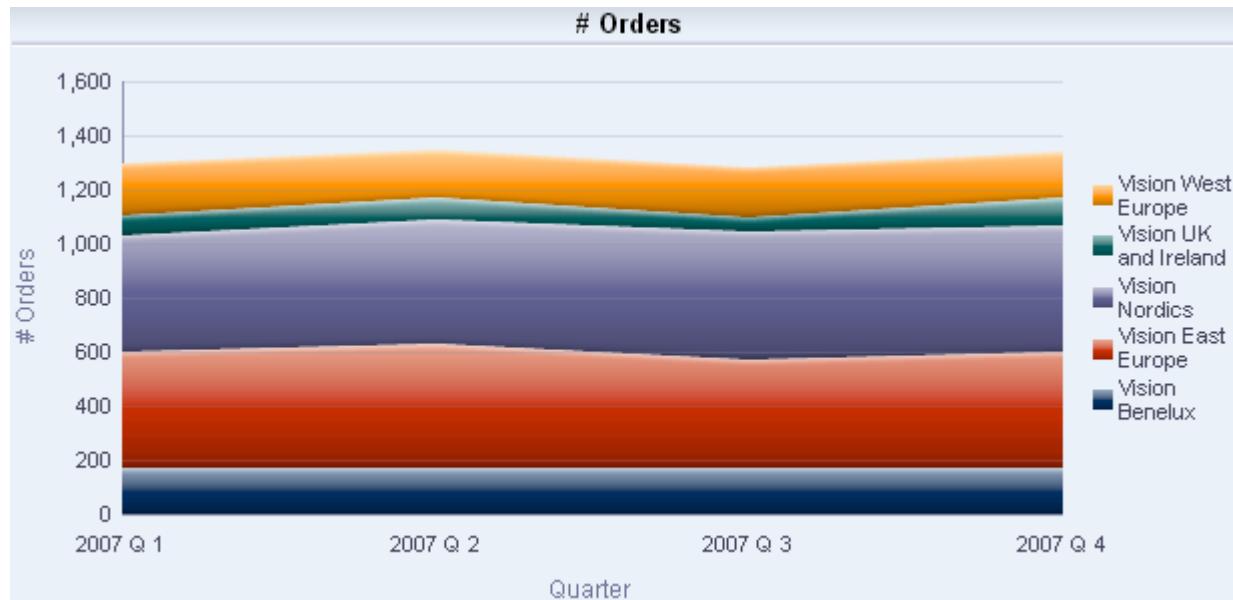
- A “**Line Bar**” enables you to have one measure displayed as a line and another as a bar
- There are two different X-axis, one on the left and the other on the right, both can have different scaling
 - In the example below, we have the monthly “Total Revenue” being displayed using bars, and the cumulative “YTD # Orders” being displayed as a line



Common Graph Types

Area Graph

- An “**Area**” graph is another form of line chart, showing clearly the different areas occupied by each dimension value on the chart – this is useful for seeing comparisons across time



Common Graph Types

Bubble

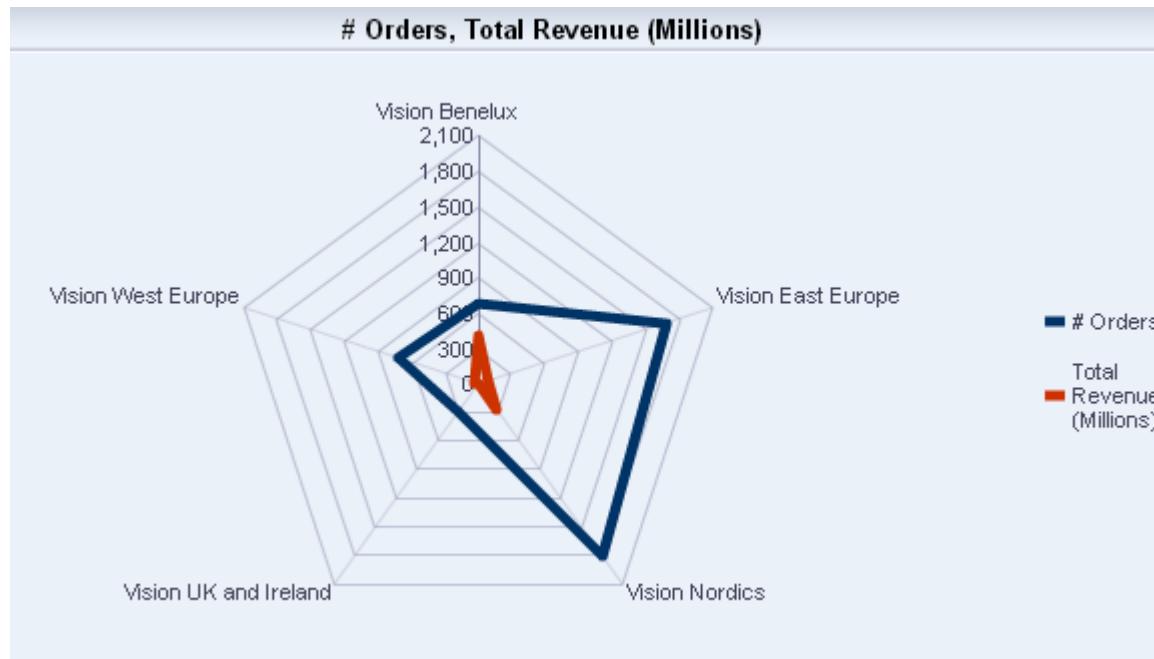
- “**Bubble**” graphs provide a more advanced view where you can analyse 3 measures in one go:
- In this example, we are comparing 3 measures for each “Business Group”:
 - # Orders *Y-Axis*
 - Total Revenue *X-Axis*
 - Sales Margin % *Size of Bubble*



Common Graph Types

Radar

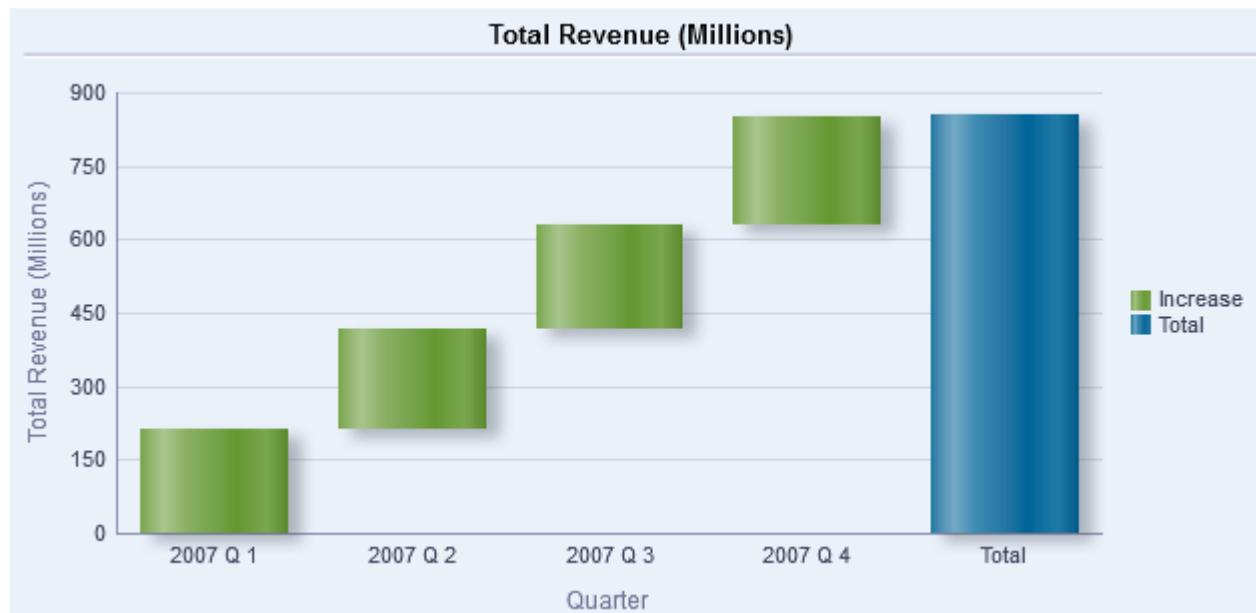
- “**Radar**” charts are great visual representations for data that can be organised by the hours of the clock (e.g. 0-12 or 0-24)
- But they are also useful to show how data is weighted towards certain Dimension values over others:



Common Graph Types

Waterfall

- “**Waterfall**” charts are a type of floating-column chart.
- They show the cumulative increase or decrease from an initial value to a final value, with each column linked to the height of the previous column.



Questions?



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