



Excel 2013 for Business Intelligence (Part 2)

Tom Jones - President, Iridium Technology LLC





Internal Data Model

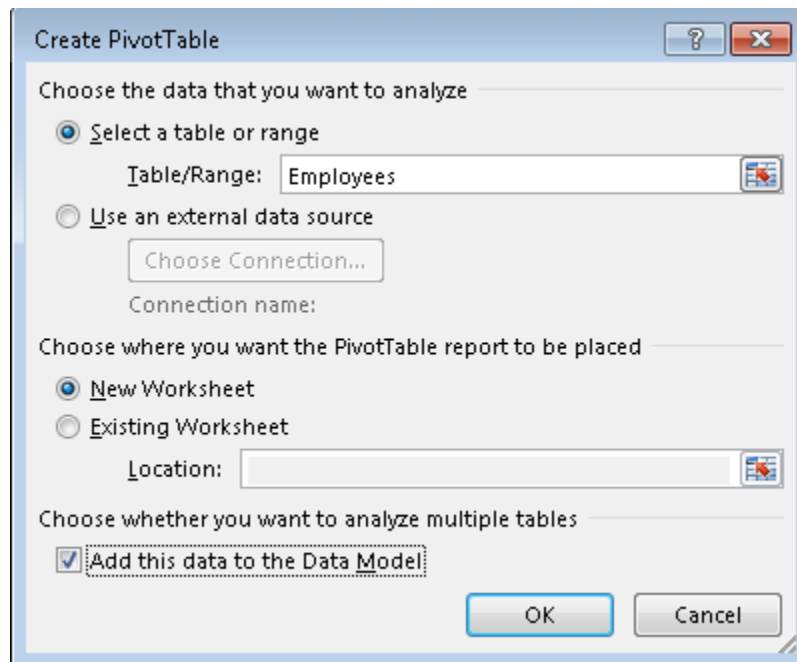


Internal Data Model

- ◆ Excel 2013 contains a new in-memory Analytics Engine called the Data Model.
- ◆ Each Excel Workbook has one.
- ◆ Combine disparate data sources and analyze them.

Add Tables to the Data Model

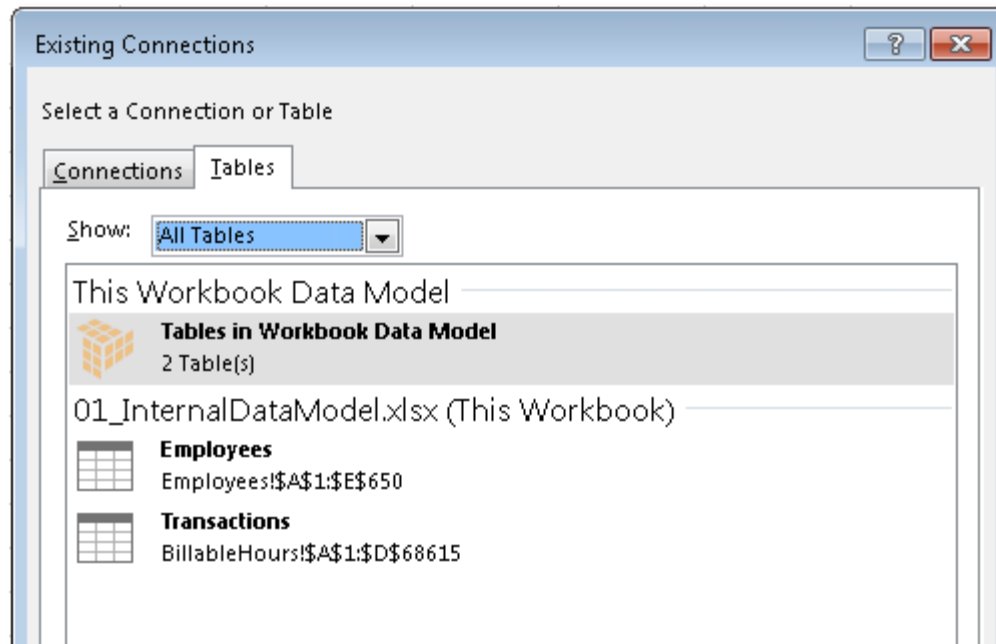
- Creating a PivotTable from data enables you to add the data to the Data Model



- Repeat for the “Transactions” table

Connecting a PivotTable to the Data Model

- ◆ The Data Model is a fully-functioning Analytics Cube that can be queried using a PivotTable



Creating Relationships Between Data

- ◆ All of the data is in the Data Model, but Excel does not yet know how the data is interrelated.
- ◆ We must create these Relationships

Create Relationship

Pick the tables and columns you want to use for this relationship

Table:	Column (Foreign):
Transactions	Employee_ID
Related Table:	Related Column (Primary):
Employees	Employee_ID

Creating relationships between tables is necessary to show related data from different tables on the same report.

Manage Relationships... OK Cancel

Queried Data Model

- ◆ You have now used the data model to query disparate data sets (in the form of separate tables)

Row Labels	Sum of Billable Hours
Paralegal	148625
Partner	9174
Trainee	7581
Grand Total	165380



Expanding the Internal Data Model

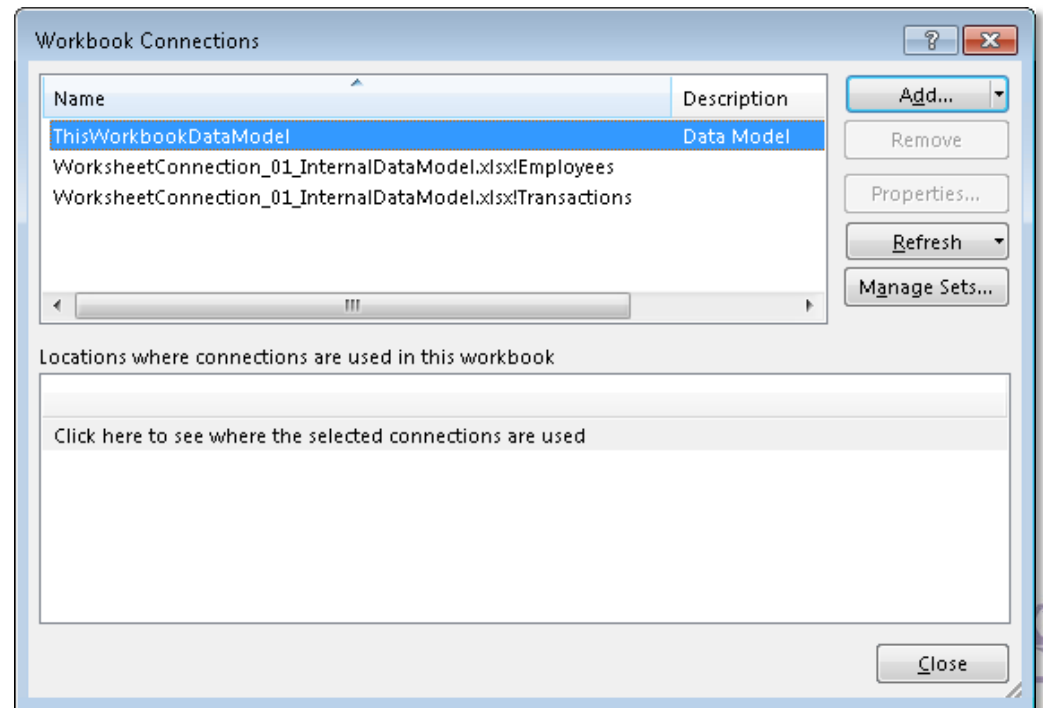
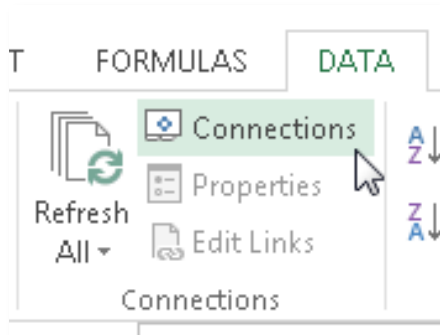


Expanding the Internal Data Model

- ◆ We will now expand out internal Data Model
- ◆ Our Employees are all attributed to an Office, and we would now like to know how our Employees contribute to [Region] an Office is located in.

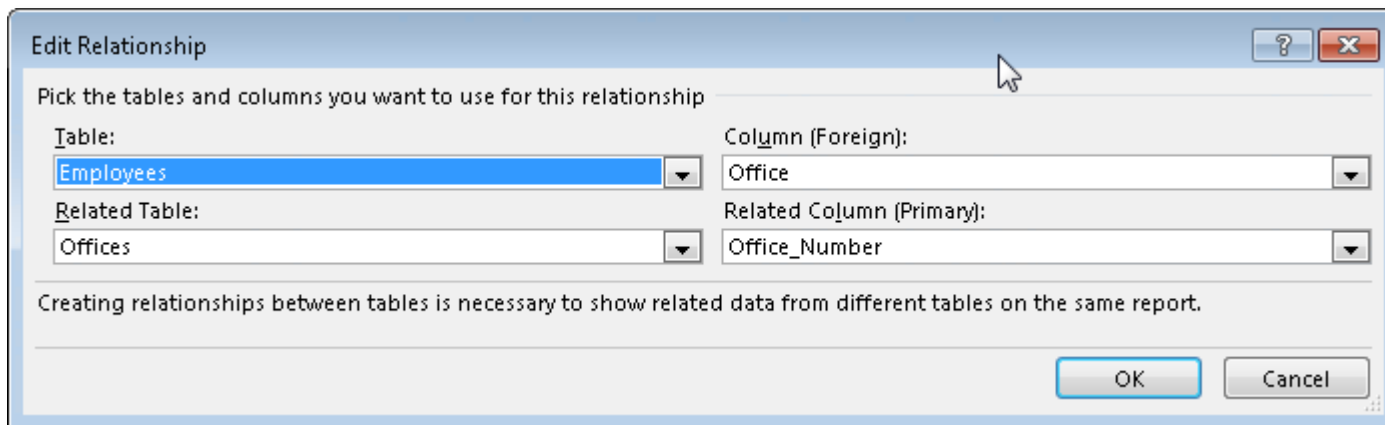
Adding a new Table the Data Model

- ◆ The 'Workbook Connections' dialog box is another location through which we can add data to the Data Model
- ◆ Press 'Add...' to add the "Offices" table to the Data Model



Add the Relationship between the data sets

- ◆ You can manage relationships via the Relationship Manager:
- ◆ Add the Relationship as described in the instructions:





Calculated Measures and Dimensions

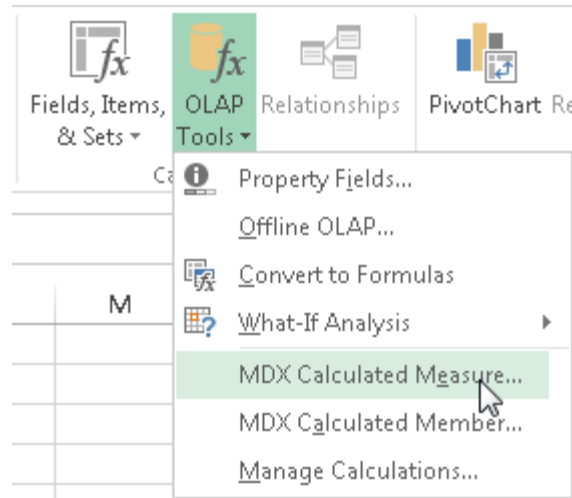


Calculated Measures and Dimensions

- ◆ New in Excel 2013
- ◆ Allows ad-hoc Measure and Dimension creation
- ◆ Calculations inside PivotTable - no more references to data in a PivotTable that must be modified after every change in the Report!

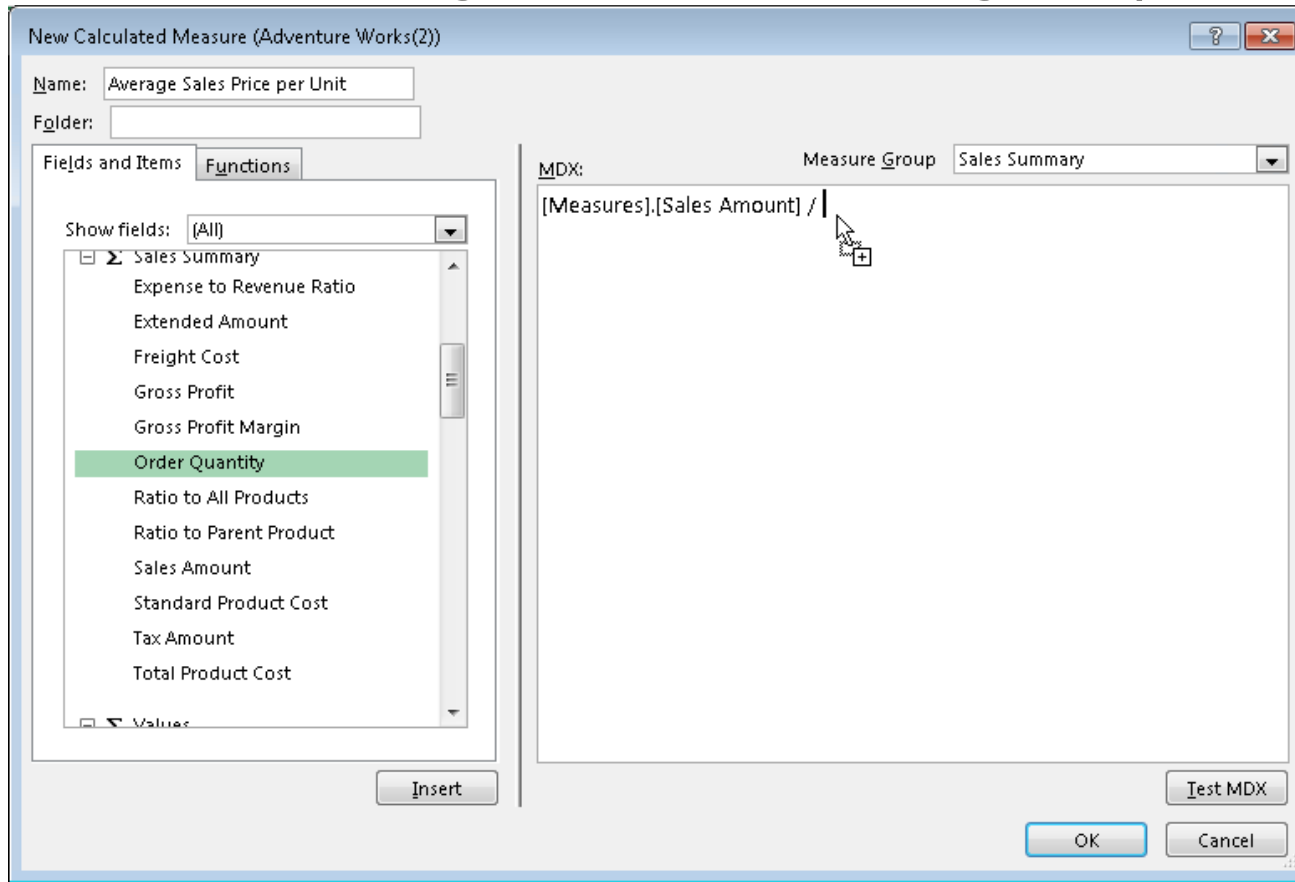
Creating a Calculated Measure

- ◆ The function is located in OLAP Tools:



Creating a Calculated Measure (cont.)

- ◆ Point-click-and-drag - No MDX Knowledge Required!



Creating a Calculated Dimension

- ◆ Much the same as creating a Calculated Measure
- ◆ However, more complicated - hierarchies, individual member manipulation
- ◆ But still click-and-drag!
- ◆ Huge step forward from Excel 2010



PowerPivot

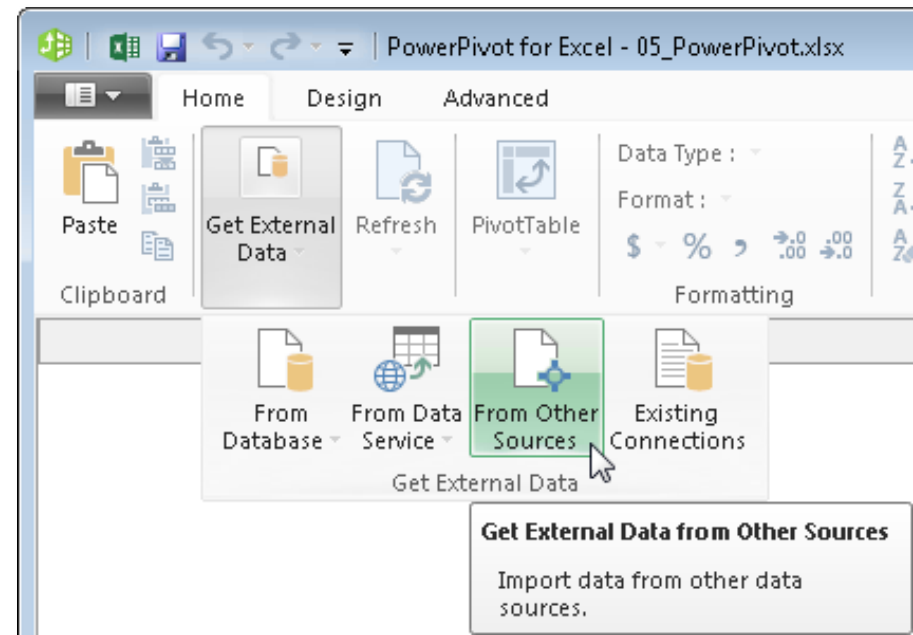


PowerPivot

- ◆ New in Excel 2013 - requires Excel 2013 Professional Plus
- ◆ This is the 'Data Model' - same engine, more user-friendly
- ◆ Can handle data sets of up to 100 million rows (given a 64-bit operating system and enough memory)
- ◆ Visualizations of Relationships between data sets

Loading Data

- ◆ You can skip columns of data when loading
- ◆ Many data sources available:
 - ◆ SQL Server, Access, Oracle, Excel workbook, Text Files, etc.
 - ◆ Full list visible here:



Creating Relationships in Diagram View

- ◆ Visualize Relationships - especially useful when many disparate data sets are brought together
- ◆ Drag-and-drop to create ties





Cool Features in PowerPivot

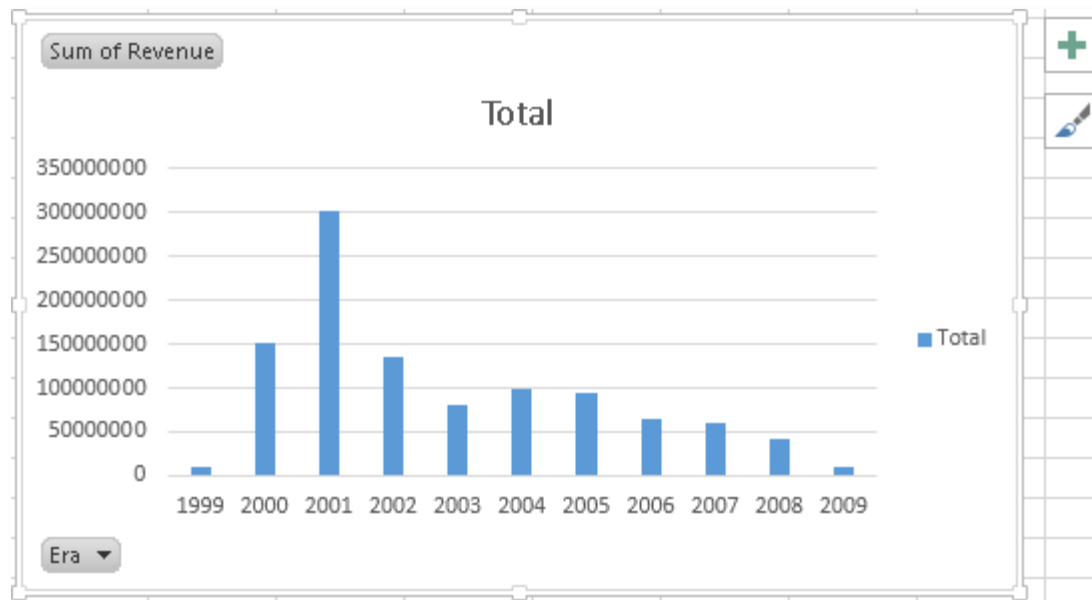


Cool Features in PowerPivot

- ◆ Standalone Charts - for those that like visualizations better than rows of numbers
- ◆ MDX Query Designer - for those experienced with MDX

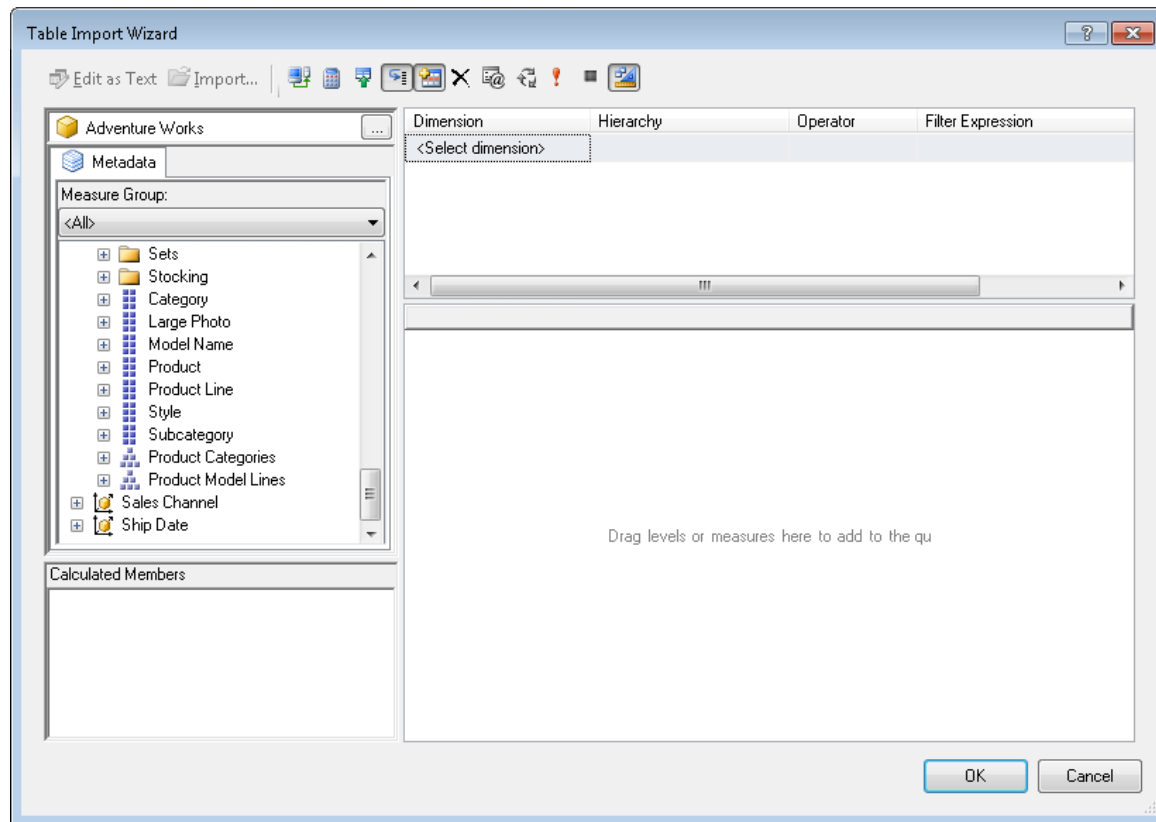
Standalone PivotChart

- ◆ Great for abstracting the data for those less number-inclined



MDX Query Designer

- ◆ For Expert users - a miniature SQL Server Management Studio



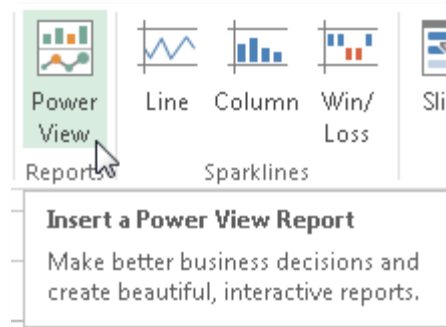


Dashboarding with Power View



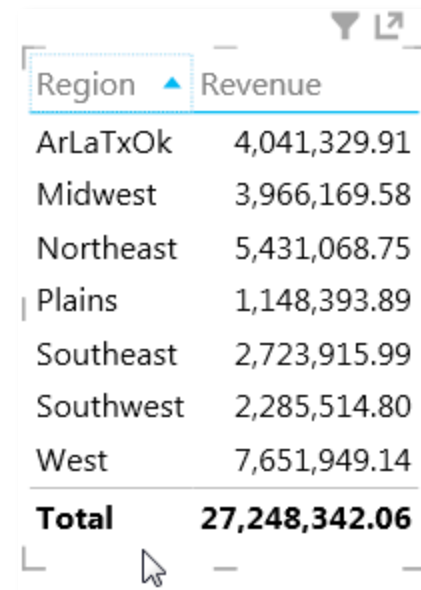
Dashboarding with Power View

- ◆ Extremely Interactive Dashboards within Excel
- ◆ Uses the Silverlight framework - can be deployed to a Server



Setup

- ◆ Insert a new Power View sheet
- ◆ Create the described relationships between the data tables
- ◆ Insert your first Dashboard Element

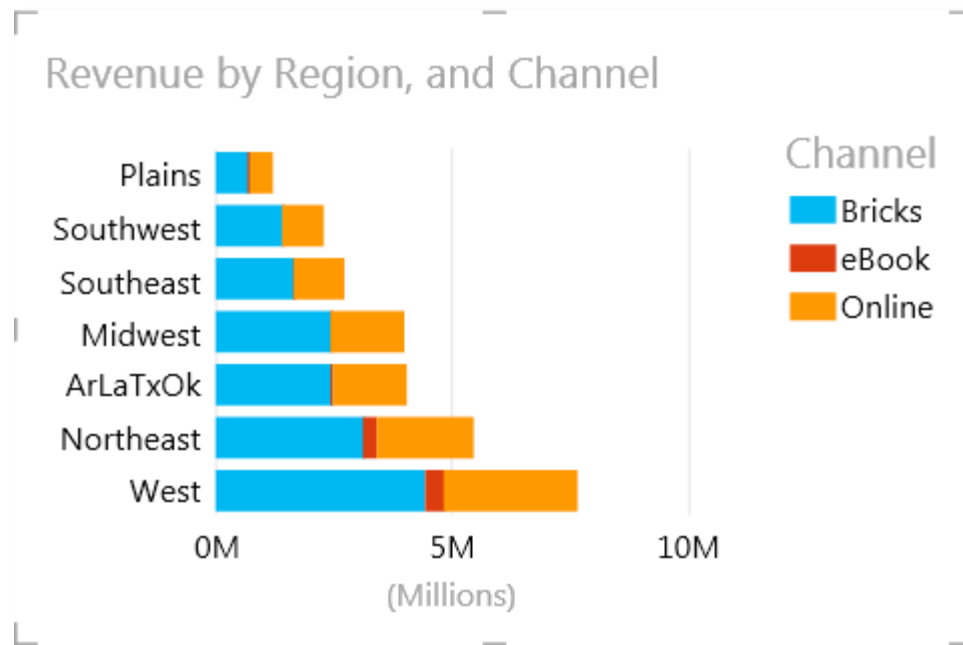


A screenshot of a Power View table with two columns: 'Region' and 'Revenue'. The table lists revenue for seven regions and a total. The 'Region' column has a dropdown arrow next to the header. The 'Revenue' column has a right-pointing arrow next to the header. The table is displayed in a window with a filter icon and a refresh icon in the top right corner.

Region	Revenue
ArLaTxOk	4,041,329.91
Midwest	3,966,169.58
Northeast	5,431,068.75
Plains	1,148,393.89
Southeast	2,723,915.99
Southwest	2,285,514.80
West	7,651,949.14
Total	27,248,342.06

Changing Visualizations and Slicing data

- ◆ Change the Chart to a Stacked Bar Chart
- ◆ Create a Legend (slice the data) by the [Channel] dimension



How Elements Interact (When you interact with them)

- ◆ Every element is a filter for every other element
 - ◆ When you change the data displayed in one through interaction, it changes how the other elements display



Dashboarding with Power View

(some more)



Dashboarding with Power View (some more)

- ◆ Slicers and Timelines act the same as everywhere else - they filter the data for the entire Dashboard
- ◆ Power View has implemented some new chart options, including the ability to 'combine' multiple charts into one element.

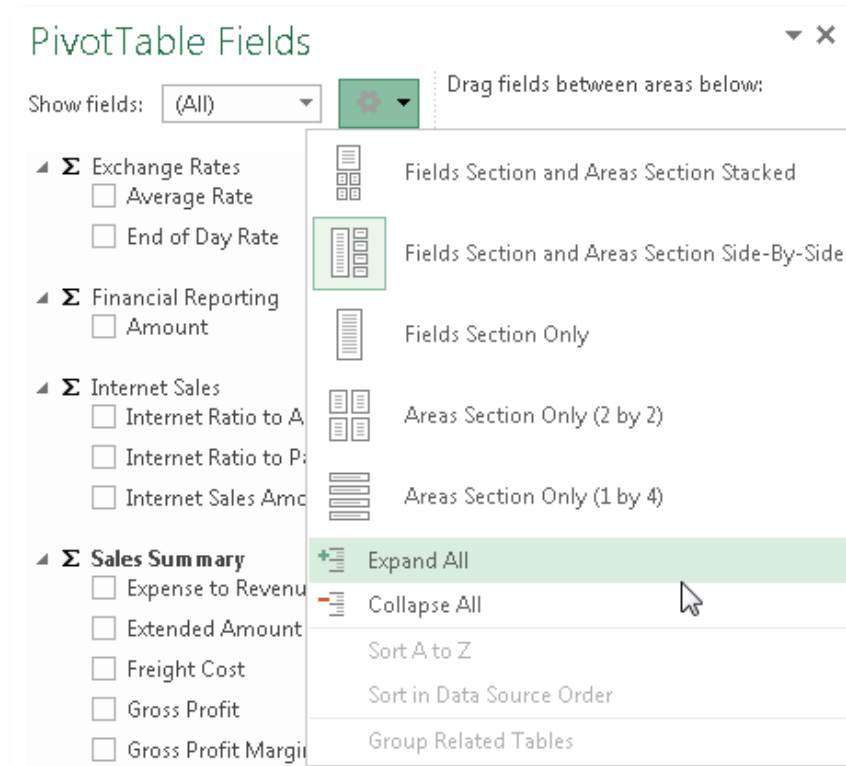


PivotTable Tips, Tricks, and Techniques



Expand All + Collapse All

- Very useful when building out a PivotTable, but a new function in Excel 2013



Deferring Layout

- ◆ “Don’t send me data until I finish telling you what data I need!”
- ◆ Lessens the amount of data transferred
- ◆ No more waiting on data to be returned after every little change to the PivotTable

Defer Layout Update

UPDATE

Refresh on Open and Actions on Refresh

- ◆ Refresh on Open: Get updated data from the data source whenever the workbook is opened
 - ◆ Great for Excel-based Reports
- ◆ Actions on Refresh
 - ◆ Preserve Formatting
 - ◆ Autofit Column Widths (no more cutoffs)

Manual Sorting

- ◆ Not all data fits into Excel's sorting Paradigm
- ◆ Sort small data sets manually to present the data in the most useful way

Filter Early

- ◆ Filter early to cut down on server load, data transfer times, and wait times.
- ◆ Filter to a subset of the data you'll eventually need when building the Report
 - ◆ Same benefits plus you can build out the PivotTable faster
 - ◆ Once the PivotTable is complete, remove any unnecessary Report Filters and retrieve the data *once*.

Thank You!