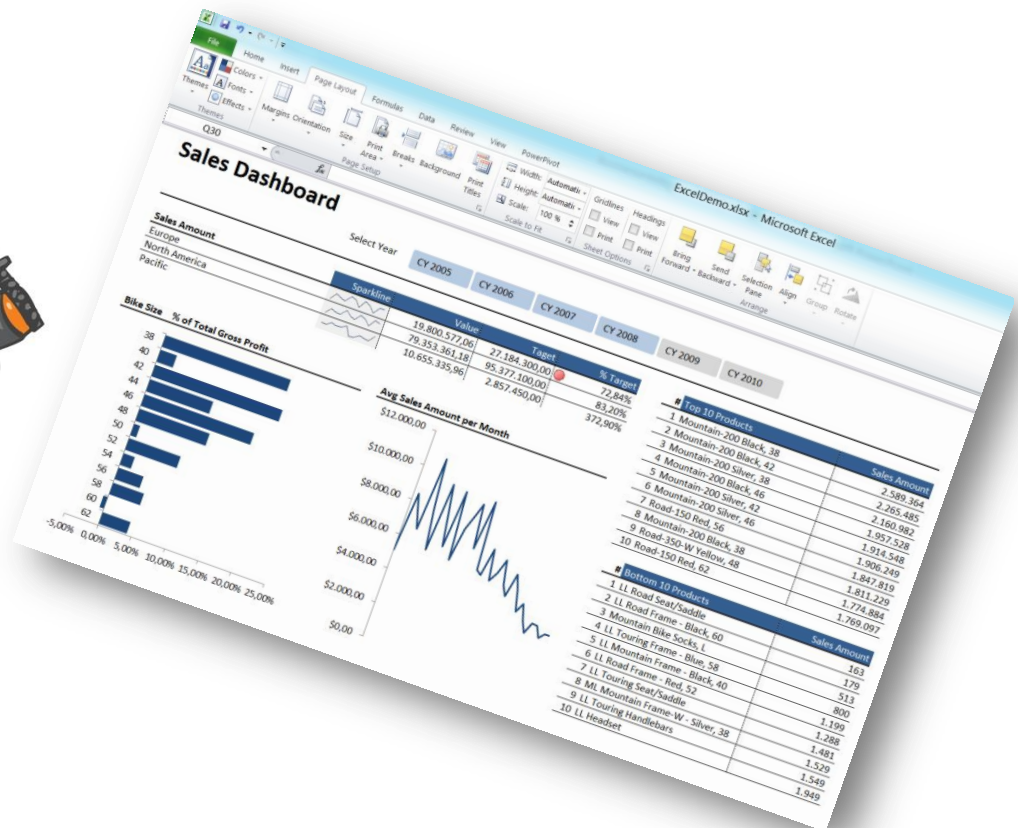


Business Intelligence with Excel 2010

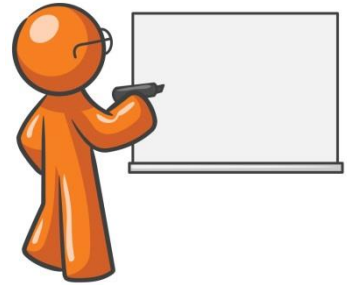


Who Am I



- ▶ Stephan Stoltze
- ▶ Working with Microsoft BI for over 12 years
- ▶ Microsoft BI Consultant and Trainer
- ▶ Founder of the Danish Microsoft BI Community (January 2008 >)
 - www.MSBIP.dk
 - www.SQLBI.dk
 - www.EXCELBI.dk

Agenda



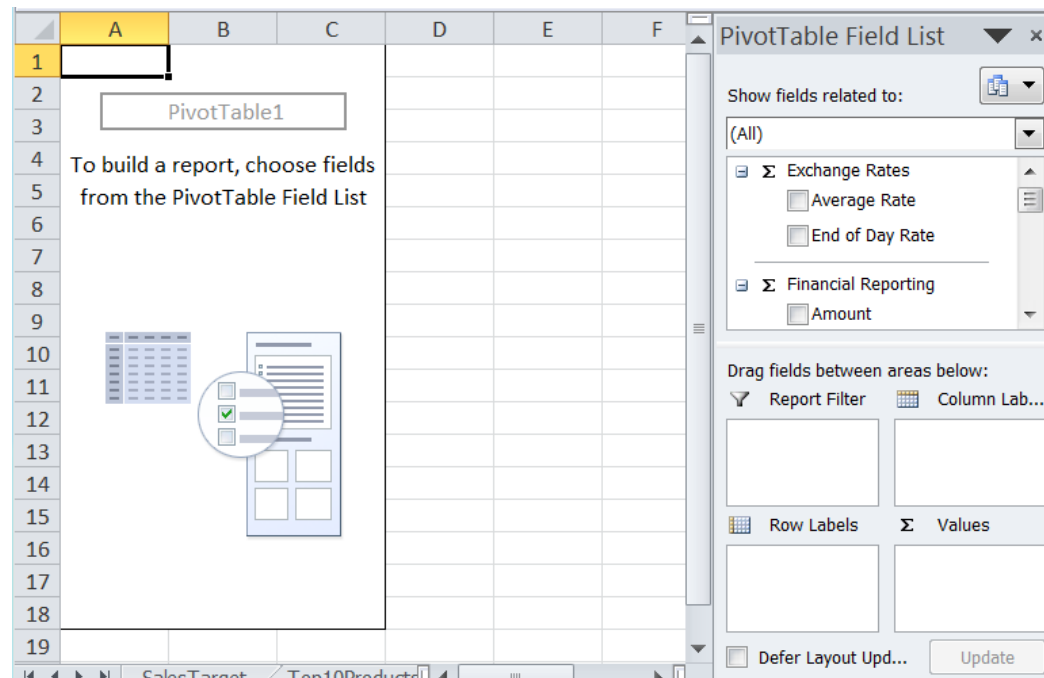
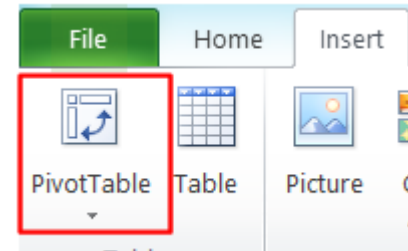
- ▶ Excel and Business Intelligence
- ▶ Introduction to PivotTables
- ▶ Gems of the PivotTable
- ▶ Free format and Cube Functions
- ▶ Do's and Don'ts
- ▶ Excel BI Add-Ins

Excel and Business Intelligence

- ▶ Excel has evolved into a collaborative tool that supports advanced analysis
- ▶ Excel is the main Desktop Client in MS Self-Service BI offerings

Introduction to PivotTables

- ▶ Enables users to build and pivot (Rotate) summary tables formatted as a matrix
- ▶ In Excel Since 1993 (Excel 5)



Connect to a Data Source

Create PivotTable

Choose the data that you want to analyze

☐ Select a table or range

Table/Range:

☒ Use an external data source

Choose Connection...

Connection name:

Choose where you want the PivotTable report to be placed

☐ New Worksheet

☒ Existing Worksheet

Location:

OK Cancel

File Home Insert Page Layout Formulas Data Review View

From Access From Web From Text From Other Sources Existing Connections Refresh All Connections Properties Edit Links

Security Warning

C8

	A
1	Product Category
2	
3	Row Labels
4	62
5	60
6	58
7	56

From SQL Server
Create a connection to a SQL Server table. Import data into Excel as a Table or PivotTable report.

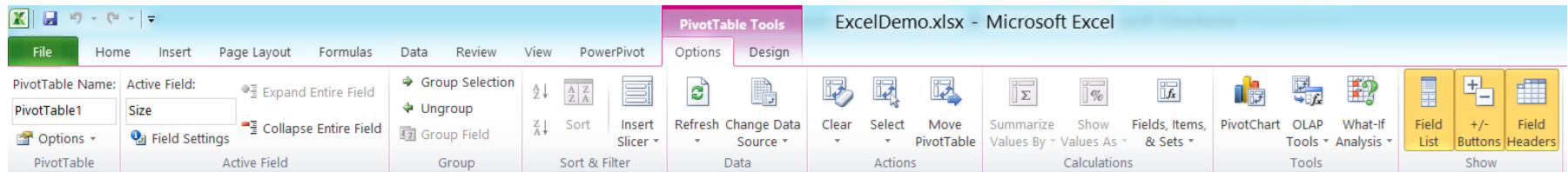
From Analysis Services
Create a connection to a SQL Server Analysis Services cube. Import data into Excel as a Table or PivotTable report.

From XML Data Import
Open or map a XML file into Excel.

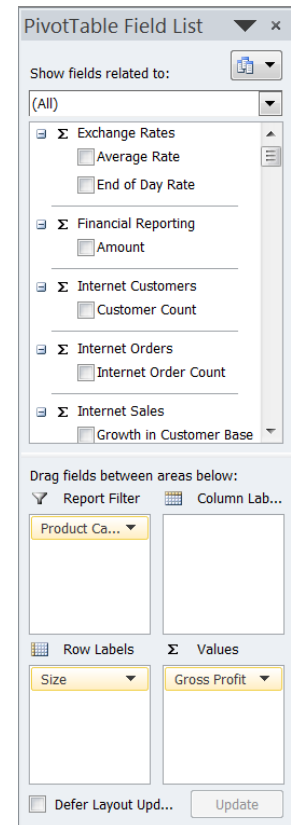
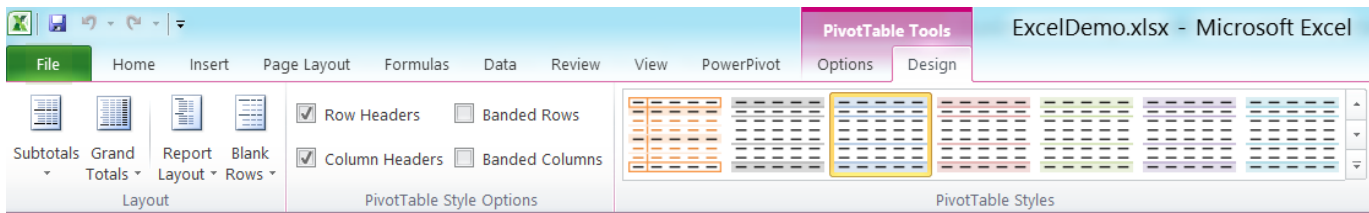
From Data Connection Wizard
Import data for an unlisted format by using the Data Connection Wizard and OLEDB.

From Microsoft Query
Import data for an unlisted format by using the Microsoft Query Wizard and ODBC.

PivotTable Tools

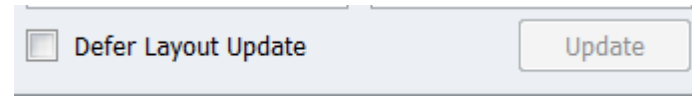
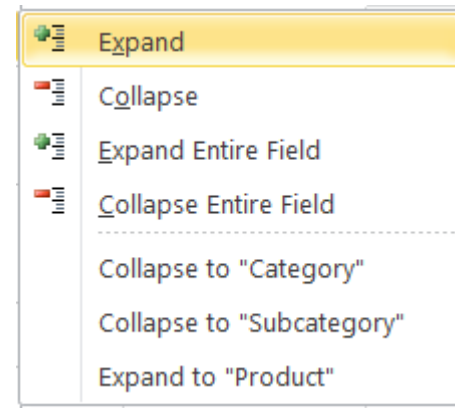


- ▶ Field List
- ▶ Options
- ▶ Design



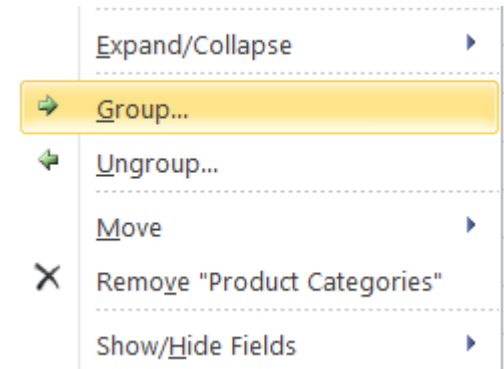
Slice'n'Dice

- ▶ Slice'n'Dice is the way you drag your data into a PivotTable and analyze it
 - Values
 - Row/Columns Labels
 - Report Filter
- ▶ Defer Layout Update
- ▶ Expand to
- ▶ Hiding Levels



Re-Ordering and Grouping

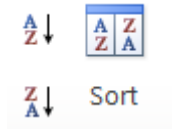
- ▶ Group/UnGroup Members
- ▶ Re-ordering
- ▶ Changes are Stored in the Workbook



Sorting and Member Search

▶ Sorting

- $A > Z$ and $Z > A$
- Context aware sorting dialogs (items vs. values)



▶ Filtering

- Keep/Hide selected items
- Top/Bottom List

▶ Member search

- Large data sets can efficiently be filtered
- Search text can contain wildcard characters
- Filter lists can be accumulated using multiple searches

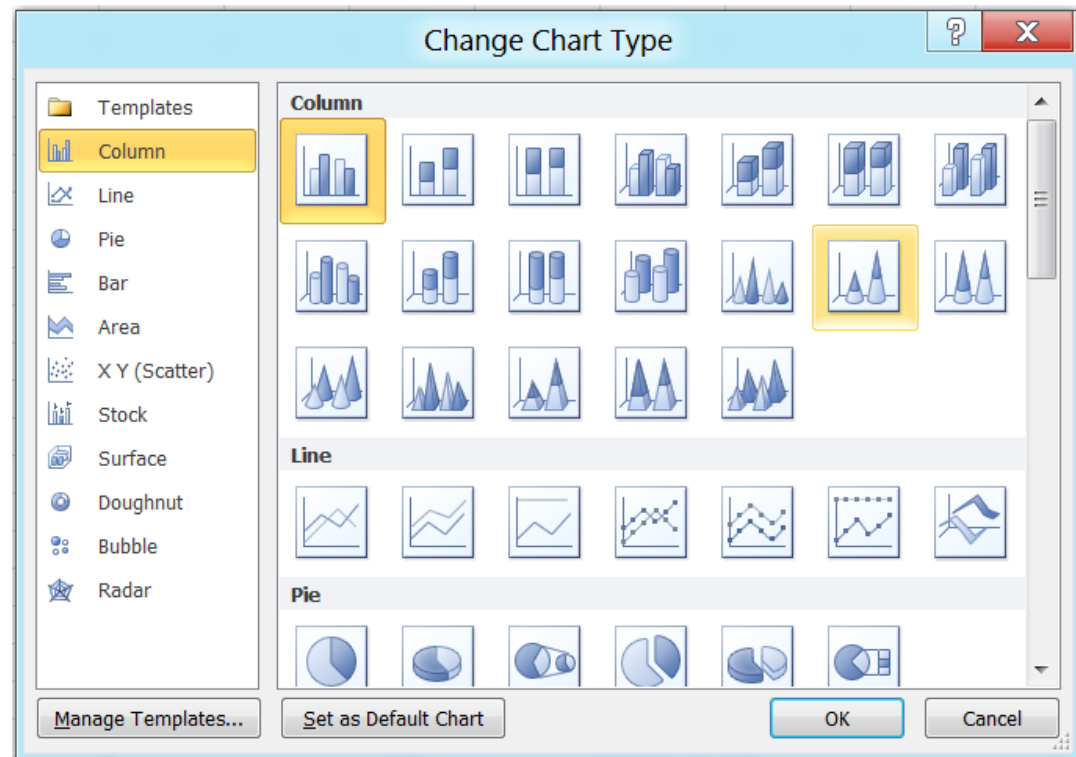
Member Properties

- ▶ User defined Member Properties from SSAS
- ▶ Show in tooltips
- ▶ Show in report

	A	B	C	D	E
1	Row Labels	Internet Order Count			
2	Accessories	18.208			
3	Bikes	15.205			
4	Mountain Bikes	4.970			
5	Mountain-100 Black, 38	49			
6	Mountain-100 Black, 42	45			
7	Mountain-100 Black, 44	60			
8	Mountain-100 Black, 48	57			
9	Mountain-100 Silver, Mountain-100 Black, 48 (Product)				
10	Class: High				
11	Color: Black				
12	Days to Manufacture: 4				
13	Dealer Price: 2024,994				
14	End Date: June 30, 2002				
15	Large Photo: 351				
16	List Price: 3374,99				
17	Model Name: Mountain-100				
18	Reorder Point: 75				
19	Safety Stock Level: 100				
20	Size: 48				
21	Size Range: 48-52 CM				
22	Standard Cost: 1898,0944				
23	Start Date: July 1, 2001				
24	Status: Historical				
25	Style: Unisex				
26	Subcategory: Mountain Bikes				
	Weight: 21.42				
	Row: Bikes - Mountain Bikes - Mountain-100 Black, 48				
	Mountain-400-W Silver, 40				
		128			

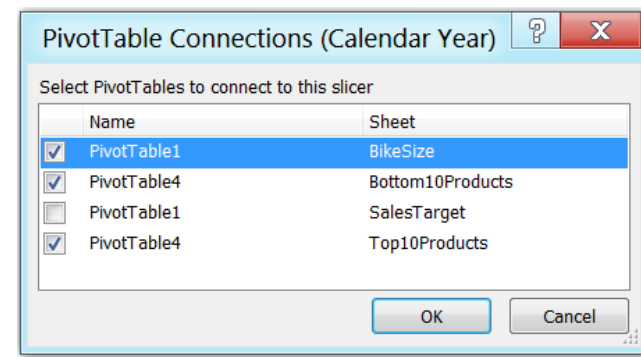
PivotChart

- ▶ 11 Different Chart Types
- ▶ Always Connected to a PivotTable



Slicers

- ▶ Visual Filter Control
- ▶ Connections Can pass selected value(s) to:
 - PivotTables
 - PivotCharts
 - CUBE functions
- ▶ Can be formatted using styles



Gems of the PivotTable

- ▶ Show Value As
- ▶ Named Sets
- ▶ Actions
- ▶ What IF Analysis

Show Value As

- ▶ Alternative to adding extra Calculated Members in SSAS
- ▶ Same value can be added several times to a PivotTable

The screenshot shows a PivotTable with 'Row Labels' and 'Gross Profit'. The data includes categories like Accessory, Components, Mountain, Road, and Touring, with a Grand Total. A context menu is open over the 'Road' row, displaying various options. The 'Show Values As' option is selected, which has opened a sub-menu. In this sub-menu, 'No Calculation' is the selected option, indicated by a checkmark. Other options include percentages of Grand Total, Column Total, Row Total, Parent Row Total, Parent Column Total, and Parent Total, as well as differences and running totals.

Row Labels	Gross Profit
Accessory	\$601
Components	\$139
Mountain	\$6.885
Road	\$4.682
Touring	\$243
Grand Total	\$12.551

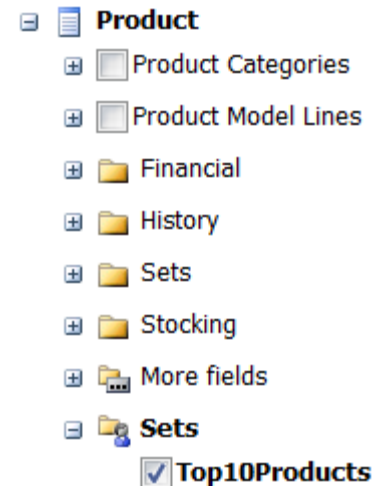
Context Menu Options:

- Copy
- Format Cells...
- Number Format...
- Refresh
- Sort
- Remove "Gross Profit"
- Show Values As
 - ☒ No Calculation
 - % of Grand Total
 - % of Column Total
 - % of Row Total
 - % Of...
 - % of Parent Row Total
 - % of Parent Column Total
 - % of Parent Total...
 - Difference From...
 - % Difference From...
 - Running Total In...
 - % Running Total In...
 - Rank Smallest to Largest...
 - Rank Largest to Smallest...
 - Index
 - More Options...
- Show Details
- Additional Actions
- Value Field Settings...
- PivotTable Options...
- Hide Field List

Named Sets

- ▶ Named, reusable sets of members
- ▶ Can combine members from different hierarchies (asymmetric reporting)
- ▶ Can be defined in both SSAS and Excel
- ▶ Defined by:
 - Explicit member selection
 - Custom MDX

CY 2005	CY 2006	CY 2007	CY 2008		
Actual	Actual	Actual	Budget	Actual	Budget



Actions

OLAP Drill Through

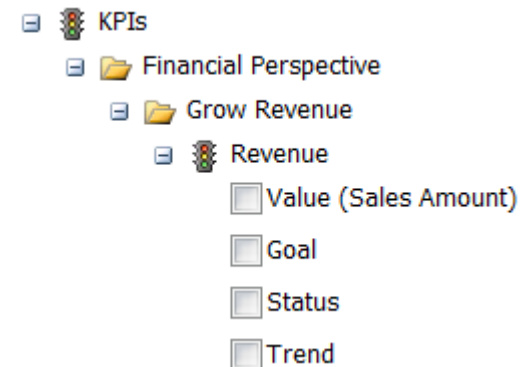
Maximum number of records to retrieve: 1000

- ▶ Show Details (Drill Through)
- ▶ Additional Actions
 - **URL** Displays a URL in a browser
 - **Report** Opens a Reporting Services report by building a report-based URL
 - **RowSet** Linking a rowset to data in a different but related cube in same database
- ▶ Server actions that are not supported in Excel
 - Proprietary, Statement, and Dataset
- ▶ Not supported on a Set or a Report Filter

Key Performance Indicators (KPI)


- ▶ KPIs Defined in SSAS are supported in Excel
- ▶ Rendering can be different in Excel

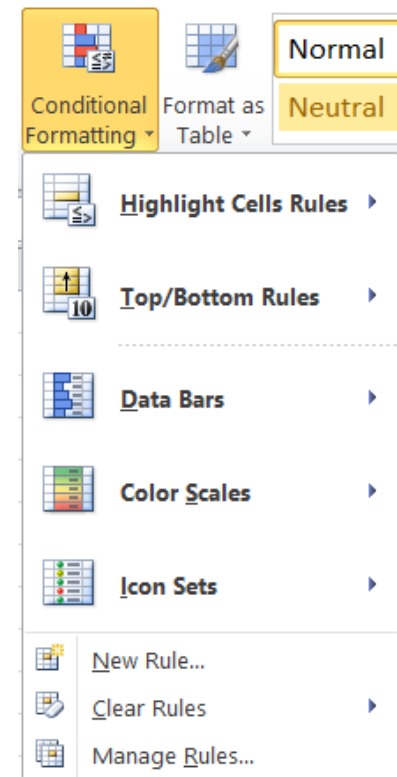
⊕ Europe	17,79%	●	➡
⊕ NA		◆	➡
⊕ North America	6,87%	◆	➡
⊕ Pacific	33,57%	●	➡



Conditional Formatting

- ▶ Allows you to highlight cells whose data satisfies certain criteria
- ▶ 5 types of standard formatting
- ▶ Rules Manager
- ▶ Re-Format SSAS Defined KPI's





Icon		Value	Type
No Cell Icon ▼	when value is	<input type="text" value=">="/> <input type="text" value="0,8"/>	Number ▼
No Cell Icon ▼	when < 0,8 and	<input type="text" value=">="/> <input type="text" value="0,8"/>	Number ▼
No Cell Icon ▼	when < 0,8 and	<input type="text" value=">="/> <input type="text" value="0,8"/>	Number ▼
 ▼	when < 0,8		



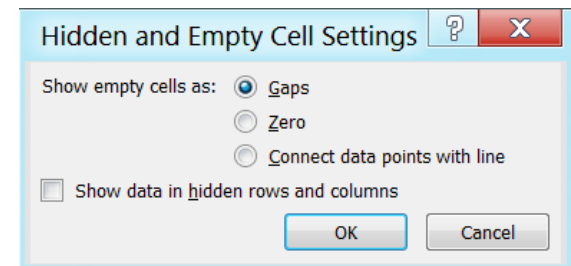
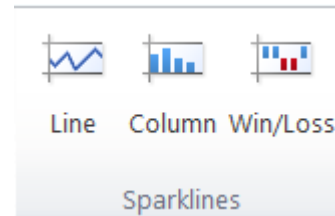
What IF Analysis / Writeback

- ▶ Writeback is the user's way to publish data back to a cube
- ▶ Other frontend applications/Excel add-ins have supported writeback since Analysis Services 2000
- ▶ With Excel 2010 Microsoft Office finally natively supports writeback to cubes
- ▶ Writeback is implemented through what-if functionality in PivotTables

Sparklines

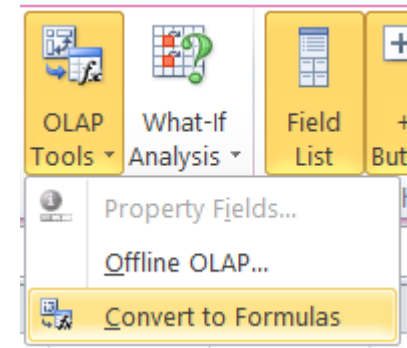
Adrian	302	
Bay	304	
Cailyn	294	
Elizabeth	259	

- ▶ Small-Heavy-Information-Trend-Lines
- ▶ Different types
 - Line
 - Column
 - Win/Loss
- ▶ Formatting options
 - Axis Options
 - Styles



Free Format Reports

- ▶ Are usefull when...
- ▶ Rearrange and delete cells
- ▶ Insert rows and columns
- ▶ Use multiple data sources
- ▶ Create a nonuniform row or column layout



Cube Functions

- ▶ **CUBEMEMBER**
 - Returns a member or tuple from the cube.
- ▶ **CUBEVALUE**
 - Returns an aggregated value from the cube for a member or tuple from the cube.
- ▶ **CUBEKPIMEMBER**
 - Returns a key performance indicator (KPI) property and displays the KPI name in the cell.
- ▶ **CUBEMEMBERPROPERTY**
 - Returns the value of a member property from the cube.
- ▶ **CUBERANKEDMEMBER**
 - Returns the n'th, or ranked, member in a set.
- ▶ **CUBESET**
 - Defines a calculated set of members or tuples.
- ▶ **CUBESETCOUNT**
 - Returns the number of items in a set.

Cube Functions Examples

- ▶ =CUBEMEMBER(". Adventure Works DW Adventure Works";"[Ship Date].[Calendar].[Calendar Year].&[2005]")
- ▶ =CUBEVALUE(". Adventure Works DW Adventure Works";"[Measures].[Sales Amount]")

Do's and Don'ts

- ▶ Use Excel for Data Analysis NOT Data Storage
- ▶ Avoid Re-Inventing Excel Hell
- ▶ Central Storage for Excel Analysis eg. SharePoint
- ▶ Avoid "one-time" analysis turning into another periodic report
- ▶ Make Excel Analysis easy to change
- ▶ Muliti select can break you SSAS cal. members

Excel BI Add-Ins

- ▶ OLAP PivotTable Extensions
- ▶ PowerPivot
- ▶ Data Explorer
- ▶ Data Mining (now also 64-bit)

Conclusion

- ▶ Combining all these features and ninja tricks
- ▶ ->
- ▶ Possible to build VERY advanced analysis reports with Excel 2010



Links

- ▶ Excel Product Team Blog
 - <http://blogs.office.com/b/microsoft-excel/>
- ▶ Analysis Services and PowerPivot Team Blog
 - <http://blogs.msdn.com/b/analysisisservices/>

Thank You



Stephan Stoltze

Principal Consultant

sst@stoltzeit.dk

[@sstoltze](#)

<http://sstoltze.wordpress.com>



[stoltze][it]