



Get Started With Power BI

Developed by Bryan L. Smith, CPA.CITP, CISA

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Bryan L. Smith, CPA.CITP, CISA

- Owner DataSmithPro, LLC
- Co-founder of CPA Crossings, LLC
- Strategic technology advisor to CPAs w/ 40+ years of experience
- Nationally recognized author and presenter on CPA technology
- Extensive knowledge and experience in proper Excel design techniques as well as helping CPAs build spreadsheets that are accurate
- As a Certified Information Systems Auditor (CISA), spent a considerable amount of time auditing and validating thousands of Excel spreadsheets
- Developed various data analysis and Microsoft Power BI courses and has worked with multiple organizations to train and coach staff on proper data analysis techniques
- Masters of Science in Information Assurance (MSIA)



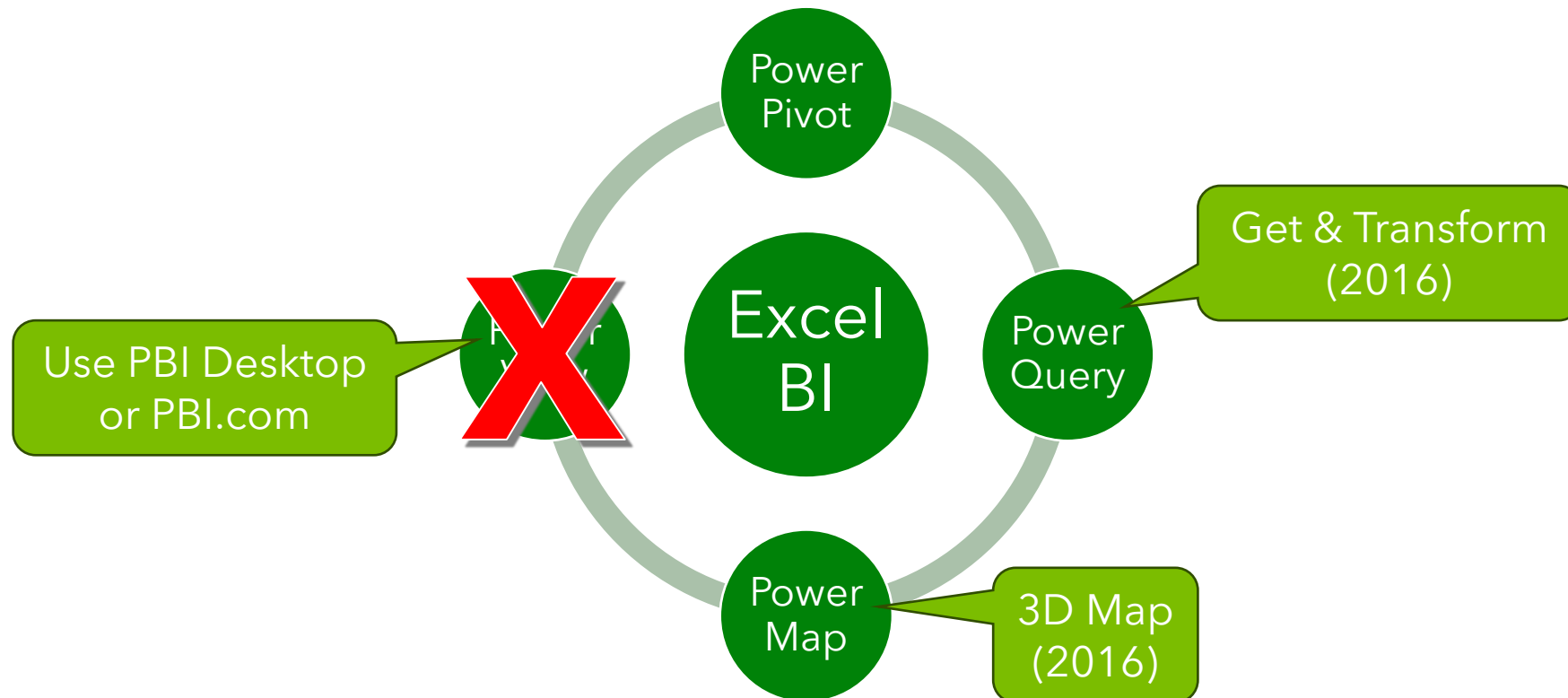
Presentation Outline

- [Overview of the Power BI Tools](#)
- [Tour of the Tools](#)
- [Comparative Analysis](#)
- [Wrap-Up](#)

Overview of the Power BI Tools



Family of Excel BI Products





Power Pivot

A data modeling tool

- Import data from multiple sources
- Relate tables / data

Eliminates complexity of getting data into Excel

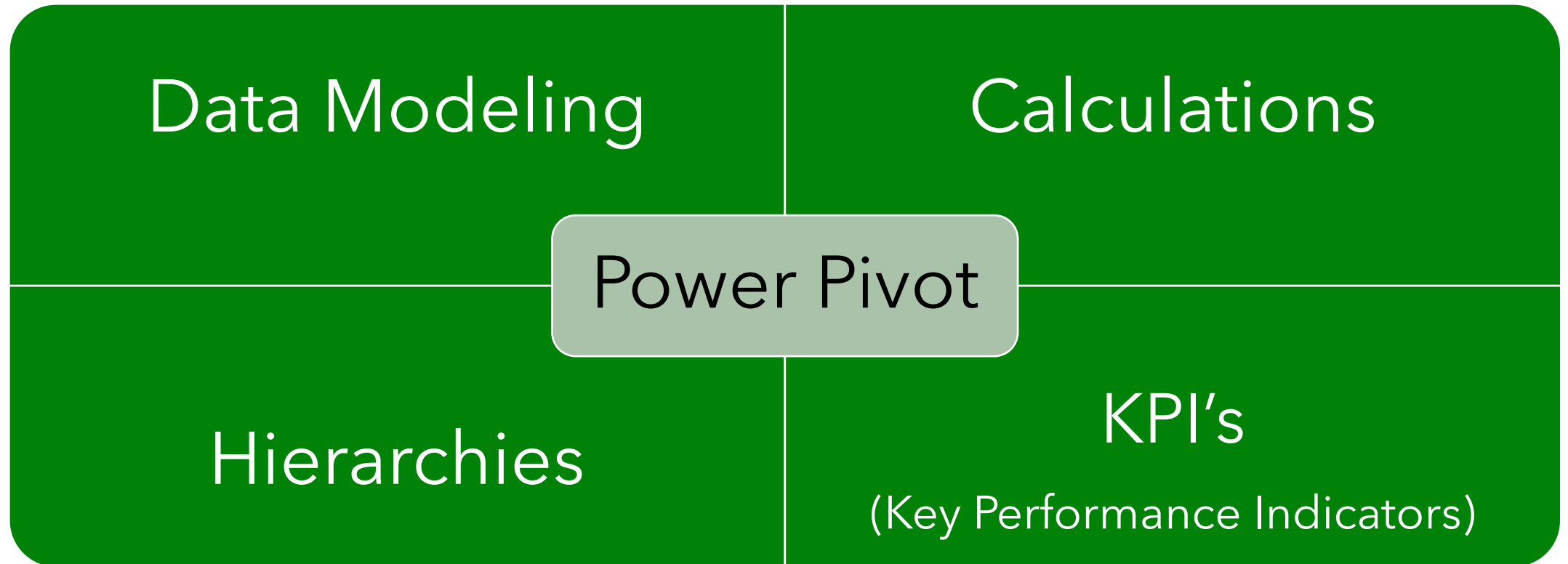
Designed for users with no SQL experience

Uses PivotTables to analyze data

Adv calcs with Data Analysis eXpressions (DAX)

Hierarchy and KPI feature

Power Pivot Features





Power Query

Power Query solves 2 BIG problems

- Messy data
- Integrating data from multiple sources is tedious

Connect to multiple different data sources

- CSV, Excel, Text, DB, etc.

Automation of data imports

Combine and extract data

“Unpivot” a table

Custom calculations with M formula language [Click Here](#)



Power Map (3D Map)

3D visualization tool for mapping data

Create an interactive, guided cinematic tour of your data on a map

See time-stamped data change over time

Automatically recognizes geographical data

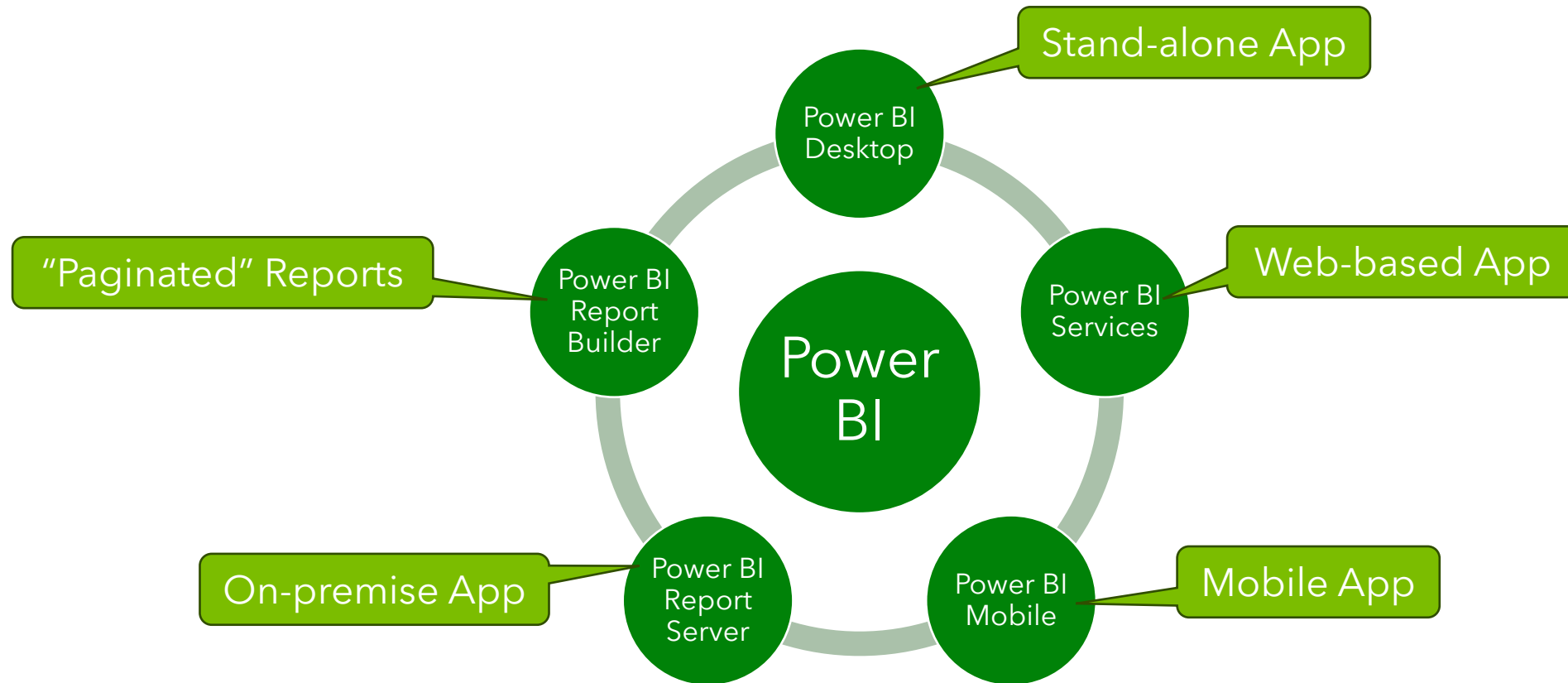
Plots associated values to points on a Bing map

Requires "high-performance" computer

3D Maps in Excel 2016 [Click Here](#)



Family of Power BI Products





Power BI Desktop

Data analysis for Excel & non-Excel users

Data modeling tool (*Power Pivot*)

Data Querying tool (*Power Query*)

Interactive visualizations (*Power View*)

Same data "engine" as Power Pivot

Import from Power Pivot

Connect to PowerBI.com

Monthly updates with new features



PowerBI.com

Cloud-based business analytics service

Robust data connector but not a data modeling tool

Use Power BI Desktop or Power Pivot to create data model

Create interactive visuals reports

Create dashboards

Mobile App to allow interactivity on mobile devices

Power BI Embedded to connect to custom applications

Share visuals inside and outside your organization



Power BI Mobile

Mobile apps for different devices

iOS, Android, Windows, Phone, Tablet

Works with Power BI Services & Report Server

Interact with visuals on reports and dashboards

Visuals can be created specifically for mobile devices

Allows anywhere, anytime access to analysis

Setup Alerts to get push notifications

Data security with Microsoft Intune management capabilities



Power BI Report Server

Publish Power BI reports on-premises

Leverages SQL Server Reporting Services (SSRS)

Distribute reports behind your organization's firewall

Entry Point is a secure web portal

Cloud-ready to provide anywhere, anytime access

Build reports with Power BI Desktop

Publish Power BI Desktop reports to PBI Report Server

Part of Power BI Premium



Power BI Report Builder

Paginated reports are designed to be printed or shared

Create reports that are formatted to fit on a page

Used for operational reports

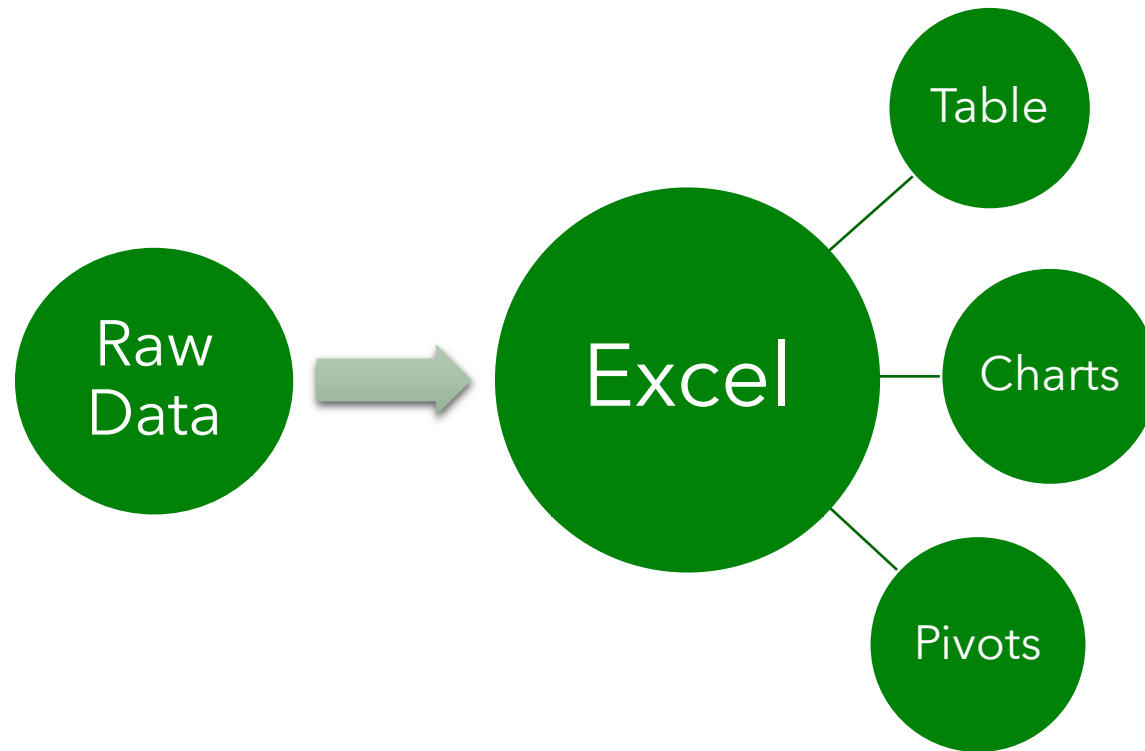
Used for printing forms, such as invoices

Share on Power BI Services with Power BI Pro license

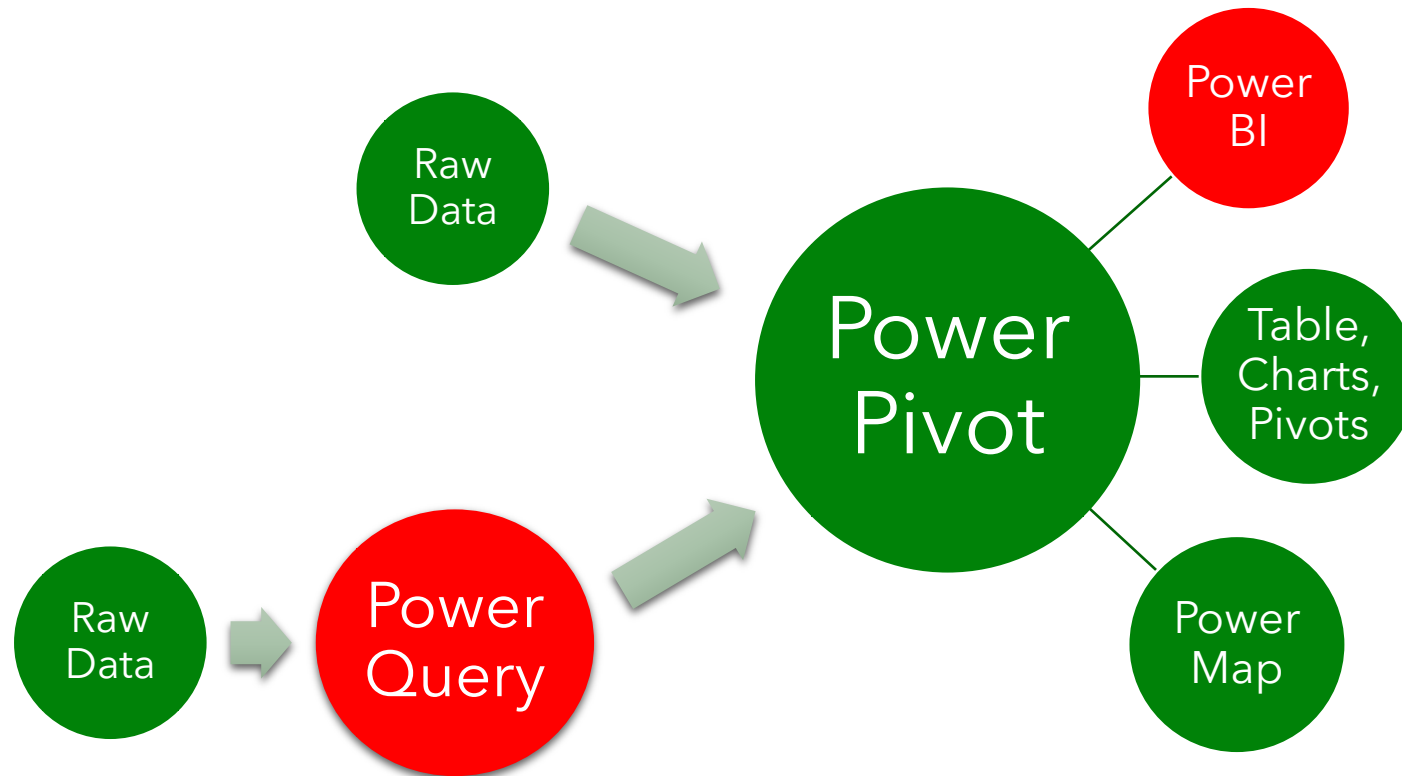
Display data in a table to span multiple pages

Standalone tool for authorizing paginated reports

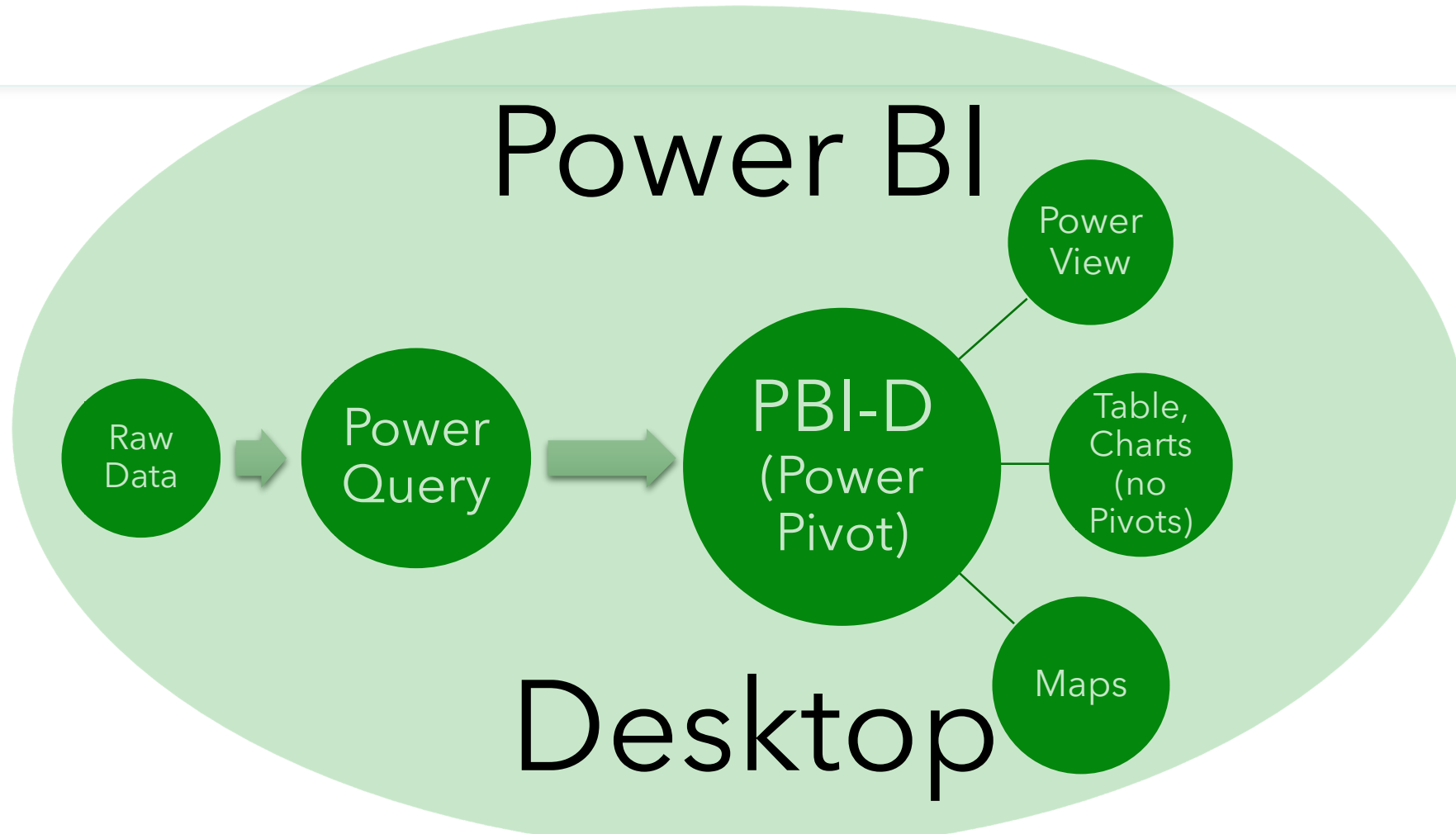
Traditional Data Analysis



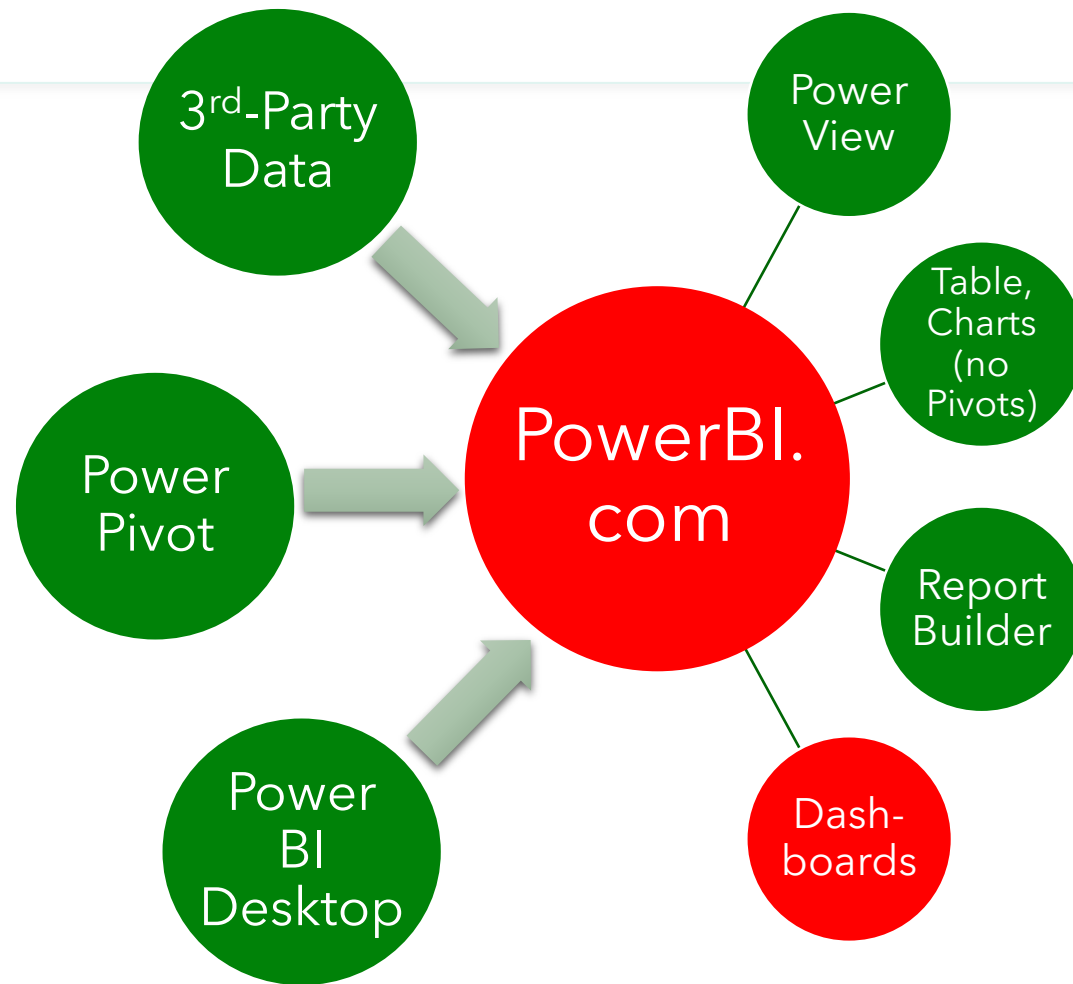
The New Excel Data Analysis Paradigm



Power BI Desktop Analysis



Web-Based Analysis



Tour of the Tools



The slides in this presentation contain many screenshots of the Power BI application in order to demonstrate particular features and functionality.

These screenshots were taken during the development of this course. However, Microsoft updates the apps regularly and it becomes difficult to constantly update the screenshots. Therefore, please note that screenshots may vary from your actual version, but the overall functionality remains the same.

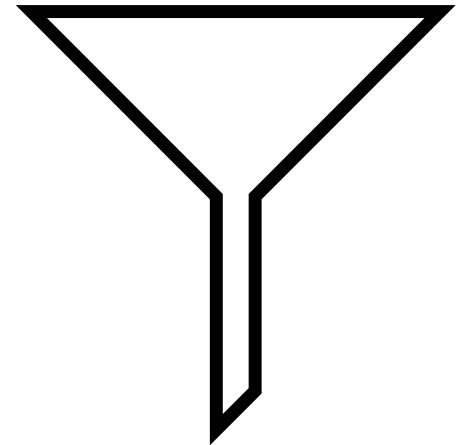
Note About Screen Shots



Application Interfaces

- Power Query
- Power Pivot
- 3D Map
- Power BI Desktop
- PowerBI.com
- Power BI Mobile
- Power BI Report Builder

Power Query



Get & Transform Data

The image shows the Microsoft Excel interface with the 'Data' ribbon selected. The 'Get & Transform Data' group is highlighted with a red box. A dropdown menu is open, showing various data source categories. A green callout bubble on the left points to this menu, labeled 'Connector Categories'. Another green callout bubble on the right points to the sub-menu items, labeled 'Individual Connectors'.

Connector Category	Individual Connector
From File	From Excel Workbook
From Database	From Text/CSV
From Azure	From XML
From Power Platform	From JSON
From Other Sources	From PDF
Combine Queries	From Folder

Get / "Load" Data

The screenshot shows the Power BI Desktop interface. On the left, the Navigator pane displays a list of tables from the 'AdventureWorks' data source. 'TblSalesPerson' is selected. The main area shows a preview of the 'TblSalesPerson' table with the following data:

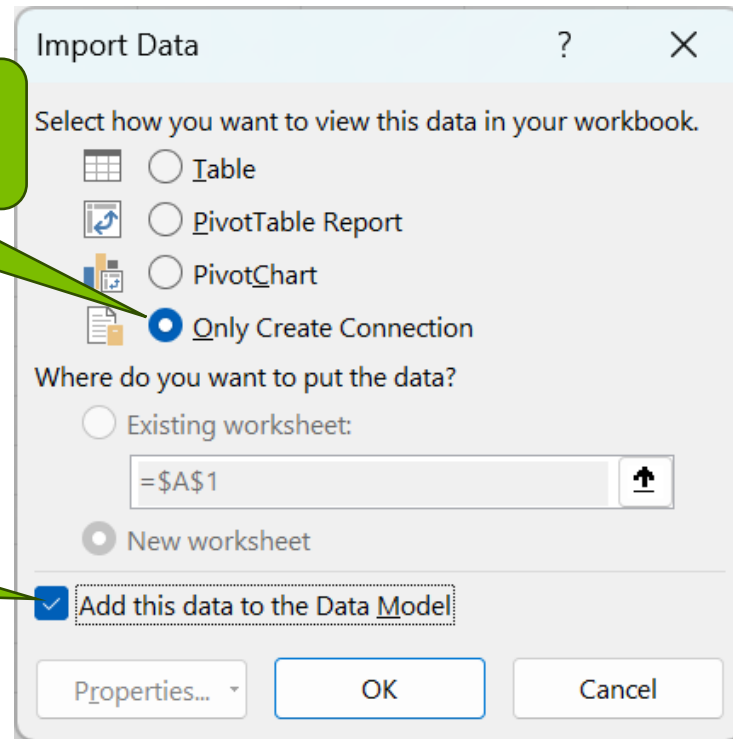
SalesPersonID	ContactID	Title	FirstName	MiddleName
280	1014	Sales Representative	Pamela	O
283	1015	Sales Representative	David	R
287	1027	Sales Representative	Tete	A
275	1026	Sales Representative	Michael	G
277	1016	Sales Representative	Jillian	n
276	1018	Sales Representative	Linda	C
281	1017	Sales Representative	Shu	K
279	1019	Sales Representative	Tsvi	Michael
278	1021	Sales Representative	Garrett	R
282	1020	Sales Representative	José	Edvaldo
286	1022	Sales Representative	Ranjit	R

At the bottom, a context menu is open over the 'Load' button. The menu options are 'Load' and 'Load To...'. A callout points to 'Load To...' with the text: "Load To" for options. Another callout points to the 'Load' button with the text: "Load" adds data to a worksheet. A third callout points to the 'Transform Data' button with the text: Edit in Power Query.

"Load To" Options

Load to a table or just create a connection

Add to Data Model for use with Power Pivot



Query Panel

TblSales

SalesOrderID	CustomerID	ProductID	OrderDate	OrderQty	UnitPrice	UnitPriceDisc
43659	676	773	7/1/2001	2	2039.994	0
43659	676	714	7/1/2001	3	28.8404	0
43659	676	778	7/1/2001	1	2024.994	0
43659	676	777	7/1/2001	3	2024.994	0
43659	676	711	7/1/2001	4	20.1865	0
43659	676	776	7/1/2001	1	2024.994	0
43659	676	774	7/1/2001	1	2039.994	0
43659	676	709	7/1/2001	6	5.7	0
43659	676	771	7/1/2001	1	2039.994	0

Columns [9]
SalesOrderID, CustomerID, ProductID, OrderDate, OrderQty, UnitPrice, UnitPriceDiscount, LineTotal, SalesPersonID

Last refreshed
1:04 PM

Load status
Loaded to Data Model

Data Sources
Loading

VIEW IN WORKSHEET EDIT ... DELETE

View details of selected query

Outline

Queries & Connections

Queries | Connections

4 queries

TblCustomers	19,185 rows loaded.
TblProducts	295 rows loaded.
TblSales	121,317 rows loaded.
TblSalesPerson	14 rows loaded.

Queries are listed in the Query Panel

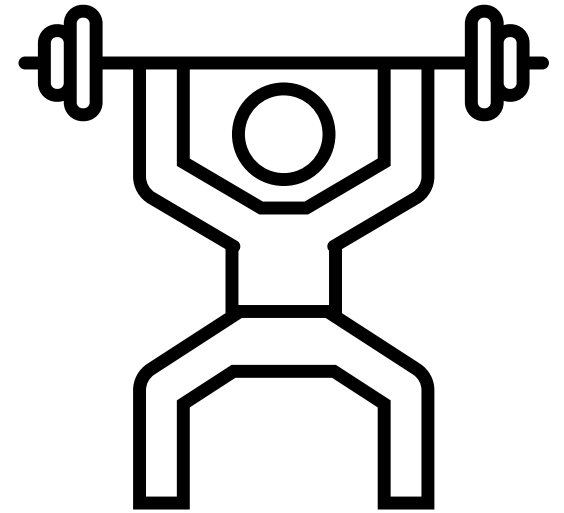
Power Query Interface

The screenshot displays the Power Query Editor window for a query named 'TblSales'. The interface includes a ribbon with tabs for File, Home, Transform, Add Column, and View. The 'Transform' tab is active, showing various data manipulation options. A data table is visible with columns: SalesOrderID, CustomerID, ProductID, OrderDate, and OrderQty. The formula bar contains the following M language code:

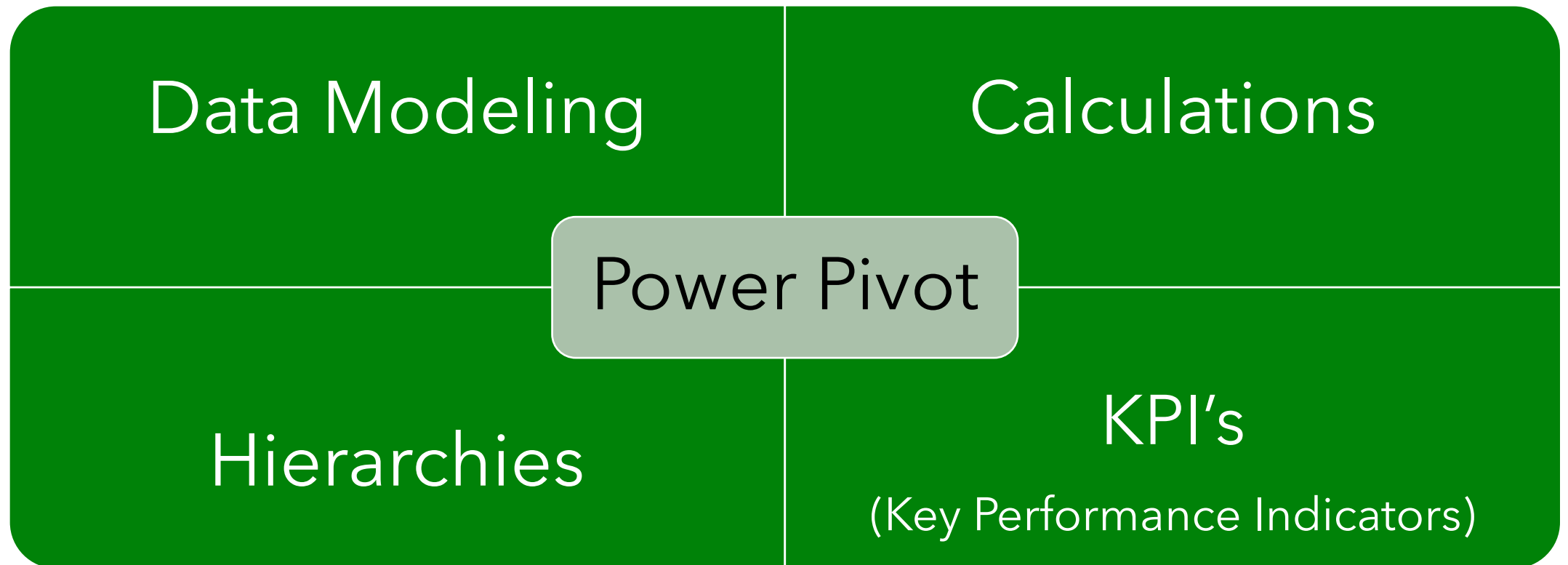
```
= Table.TransformColumnTypes(#"Renamed Columns",{{"SalesOrderID", Int64.Type}, {"CustomerID", Int64.Type}, {"ProductID", Int64.Type}, {"OrderDate", type date}, {"OrderQty", Int64.Type}, {"UnitPrice", type number}, {"DiscPct", Percentage.Type}, {"LineTotal", type number}, {"SalesPersonID", Int64.Type}})
```

The 'Query Settings' pane on the right shows the 'APPLIED STEPS' list, which includes 'Source', 'Navigation', 'Renamed Columns', and 'Changed Type'. A green callout bubble points to the formula bar with the text 'Formula using "M" language'. Another green callout bubble points to the 'Changed Type' step in the 'APPLIED STEPS' list with the text 'Making changes to the query creates "step" so data is updated on refresh'. The status bar at the bottom indicates '9 COLUMNS, 999+ ROWS' and 'Column profiling based on top 1000 rows'.

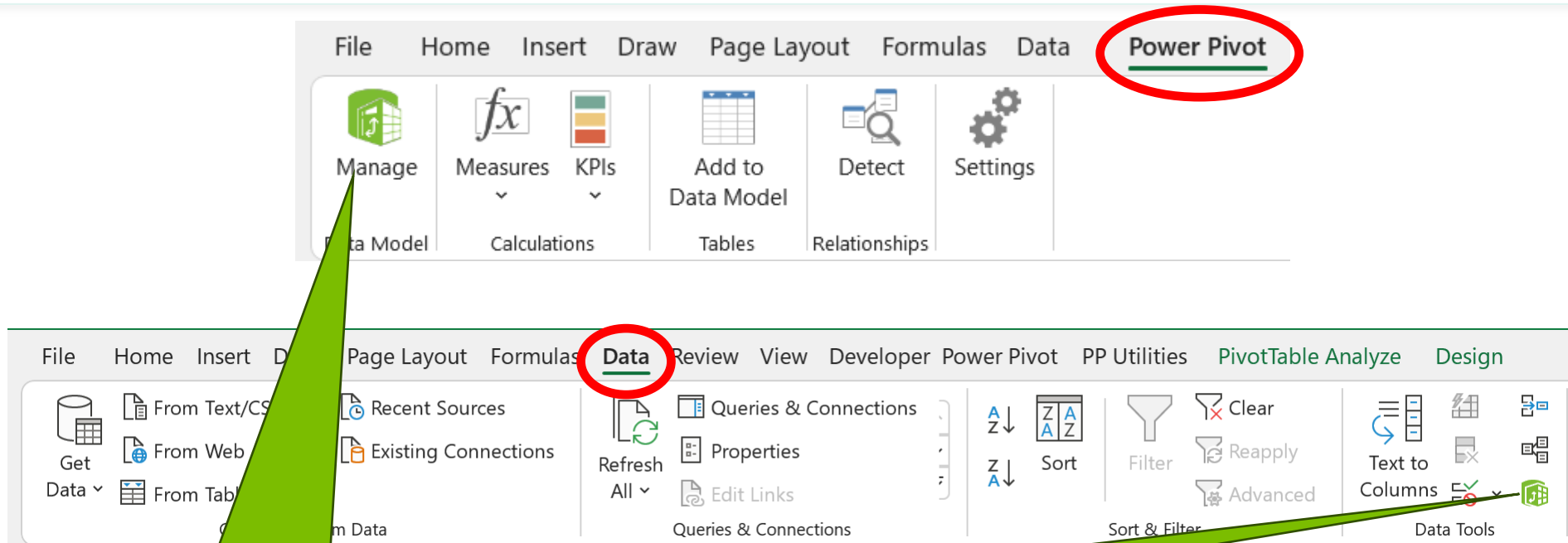
Power Pivot



Power Pivot Features



Power Pivot Ribbon Bar



Most of the Power Pivot work will be done in Manage Data Model

Manage Data Model Interface - Data View

The screenshot shows the Power Pivot for Excel interface. The ribbon includes File, Home, Design, and Advanced. The Advanced ribbon is active, showing options like Data Type, Format, Clear All Filters, Sort by Column, Find, AutoSum, Create KPI, Diagram View, Show Hidden, and Calculation Area. The data table below has the following columns and rows:

	SalesOrderID	CustomerID	ProductID	OrderDate	OrderQty	UnitPrice	DiscPct	LineTotal	SalesPerson
1	51178	11245	870	7/1/2003 12:00:00 AM	1	4.99	0	4.99	
2	51180	16313	870	7/1/2003 12:00:00 AM	1	4.99	0	4.99	
3	51191	12390	870	7/2/2003 12:00:00 AM	1	4.99	0	4.99	
4	51196	18906	870	7/2/2003 12:00:00 AM	1	4.99	0	4.99	
5	51197	11448	870	7/2/2003 12:00:00 AM	1	4.99	0	4.99	
6	51198	11006	870	7/2/2003 12:00:00 AM	1	4.99	0	4.99	
7	51199	21440	870	7/2/2003 12:00:00 AM	1	4.99	0	4.99	
8	51203	18208	870	7/3/2003 12:00:00 AM	1	4.99	0	4.99	
9	51205	11240	870	7/3/2003 12:00:00 AM	1	4.99	0	4.99	
10	51206	11400	870	7/3/2003 12:00:00 AM	1	4.99	0	4.99	
11	51207	11338	870	7/3/2003 12:00:00 AM	1	4.99	0	4.99	
12	51214	19765	870	7/3/2003 12:00:00 AM	1	4.99	0	4.99	
13	51216	11117	870	7/3/2003 12:00:00 AM	1	4.99	0	4.99	
14	51223	26826	870	7/3/2003 12:00:00 AM	1	4.99	0	4.99	
SumSales: \$109,846,381									

At the bottom of the window, there are tabs for TblCustomers, TblProducts, TblSales, and TblSalesPerson. The status bar shows 'Record: 1 of 121,317'.

This is where you manage the Data Model

Manage Data Model Interface - Diagram View

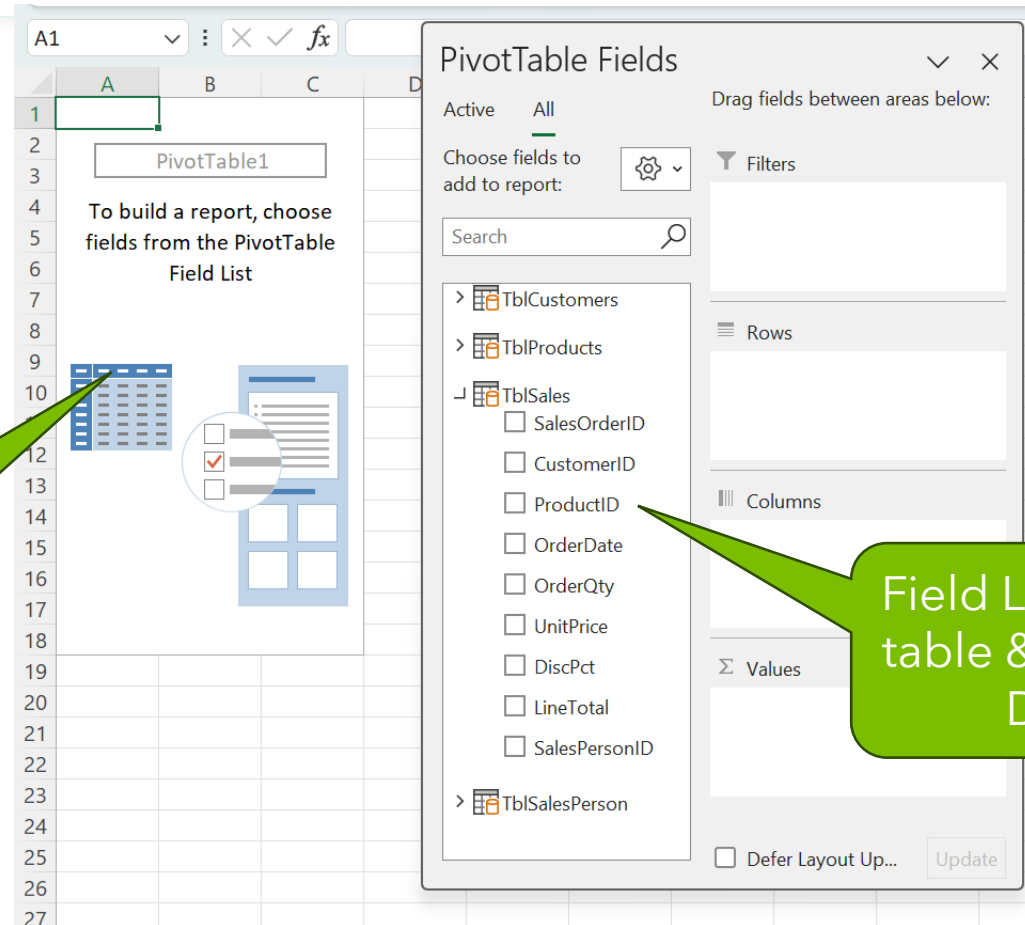
The screenshot displays the Power Pivot for Excel - Book1 interface in Diagram View. The ribbon includes File, Home, Design, and Advanced tabs. The Design tab is active, showing options for From Database, From Data Service, From Other Sources, Existing Connections, Refresh, and PivotTable. The Diagram View ribbon is also visible, showing options for Data View, Diagram View, Show Hidden, and Calculation Area. The main area shows a data model with four tables: TblSales, TblCustomers, TblProducts, and TblSalesPerson. TblSales has columns: SalesOrderID, CustomerID, ProductID, OrderDate, OrderQty, UnitPrice, DiscPct, LineTotal, and SalesPersonID. TblCustomers has columns: CustomerID, Sales_StoreName, LastName, FirstName, and MiddleName. TblProducts has columns: ProductID, Production_Produ..., Color, Size, and SizeUnitMeasureC... TblSalesPerson has columns: SalesPersonID, ContactID, Title, FirstName, and MiddleName. Relationships are shown between TblCustomers and TblProducts (1 to many), and between TblProducts and TblSalesPerson (1 to many). A callout box in the bottom right corner states: "This is where you create relationships between tables".

Getting Data from Power Pivot to Excel

The screenshot shows the Microsoft Excel interface with the Home tab selected. The ribbon includes options for Paste, Get External Data (From Database, From Data Service, From Other Sources), Existing Connections, Refresh, and PivotTable. The PivotTable button is highlighted, and its dropdown menu is open, showing options: PivotTable, PivotChart, Chart and Table (Horizontal), Chart and Table (Vertical), Two Charts (Horizontal), Two Charts (Vertical), Four Charts, and Flattened PivotTable. A green callout bubble points to the PivotTable button with the text: "Select Home - PivotTable, the select PivotTable type and data will be added to New Worksheet".

	Custo...	Sales_StoreNam
1	11015	Young, Chloe
2	11024	Xie, Russell
3	11064	Reed, Chase
4	11065	Henderson, Jessi
5	11085	Johnson, Emily
6	11086	Brown, Ryan

PivotTable in Excel



Familiar PivotTable interface

Field List includes each table & the fields in the Data Model

Creating a PivotTable

1	Sum of LineTotal	Accessories	Bikes	Clothing	Components	Grand Total
2	Row Labels					
3	Ansman-Wolfe	13394.47581	2806092.98	55672.8657	449942.2724	3325102.594
4	Blythe	41061.33209	7683632.904	161348.4847	1407860.283	9293903.004
5	Campbell	14661.06905	3111693.744	59112.8519	544477.6839	3729945.349
6	Carson	73574.54921	8363411.054	219209.359	1409608.578	10065803.54
7	Ito	36838.89997	5365753.705	108683.2474	915729.7018	6427005.554
8	Mensa-Annan	12884.49014	1938479.496	41752.29298	319429.4113	2312545.69
9	Mitchell	69083.44718	8660468.697	234493.7513	1402961.531	10367007.43
10	Pak					
11	Active Life Toys	1001.281	176802.984	3683.0827	18526.0183	200013.366
12	Bikes for Kids and Adults	60.55956	25675.4953	2711.106	1203.95	29651.11086
13	Bikes for Two	100.373	3893.6376	610.0185	3119.85	7723.8791
14	Camping and Sports				20.32155	343349.7833
15	Certified Sports Su				66.736	5297.718
16	Citywide Service ar					
17	Commuter Bicycle					2999.466
18	Corner Bicycle Sup				276.3	2612.256
19	Courteous Bicycle				17.438	1691.88
20	Eastside Parts Sho				96.329	1439.1808
21	Economy Center				014.18	12224.87903
22	Efficient Cycling				29.958	196449.4375
23	Farthest Bike Store				90.0212	215723.1491
24	Finer Riding Suppl				8213.01	2825.0203
25	Future Bikes				202.332	202.332
26	Gear-Shift Bikes Limited					
27	General Industries	1608.019		2471.282574	4320.6922	8399.993774
28	General Supplies	4653.46	269744.3664	9498.46812	34281.298	318177.5925
29	Greater Bike Store		60945.1632	3626.611668	1775.5765	66347.35137

PivotTable Fields

Active All

Choose fields to add to report:

Search

Filters

Rows

- LastName
- Sales_StoreName

Columns

- Production_ProductCategoryNa...

Σ Values

- Sum of LineTotal

Defer Layout Update Update

Tables are "linked" in the Data Model, so you can select any field to populate the PivotTable

Select fields exactly the same way as a regular PivotTable

Calculation in Power Pivot

- Data Analysis Expression (DAX) formula language
- Many are similar to Excel functions
- Time-Intelligent Functions
 - CLOSINGBALANCEYEAR (MONTH QTR)
 - NEXTDAY, NEXTMONTH, NEXTYEAR
 - PREVIOUSDAY, PREVIOUSMONTH, PREVIOUSYEAR
 - TOTALMTD, TOTALQTD, TOTALYTD ... & more

Calculations ("Measures") in the Data Model

[SalesOrderID] fx PeriodSales:=IF(COUNTROWS(VALUES(DimPeriod[Period]))=1,
 IF(VALUES(DimPeriod[Period]) = "Current", [Sales],
 IF(VALUES(DimPeriod[Period]) = "MTD", [Sales](DATESMTD(DimDate[Datekey])),
 IF(VALUES(DimPeriod[Period]) = "QTD", [Sales](DATESQTD(DimDate[Datekey])),
 IF(VALUES(DimPeriod[Period]) = "YTD", [Sales](DATESYTD(DimDate[Datekey])),
 IF(VALUES(DimPeriod[Period]) = "LastYear", [Sales](DATEADD(DimDate[Datekey],-1,YEAR)),
 IF(VALUES(DimPeriod[Period]) = "PriorYearMTD", [Sales](DATEADD(DATESMTD(DimDate[Datekey]),-1,YEAR)),
 IF(VALUES(DimPeriod[Period]) = "PriorYearQTD", [Sales](DATEADD(DATESQTD(DimDate[Datekey]),-1,YEAR)),
 IF(VALUES(DimPeriod[Period]) = "PriorYearYTD", [Sales](DATEADD(DATESYTD(DimDate[Datekey]),-1,YEAR)),
 BLANK())))))).[Sales])

SalesOrderID	Custo...	Prod...	OrderDate	OrderQty	UnitPrice	UnitPriceDiscount	LineTot
1	43659	676	1/2001 12:00:00 AM	1	\$2,039.99	\$0.00	203
2	43659	676	1/2001 12:00:00 AM	1	\$2,039.99	\$0.00	203
3	43659	676	1/2001 12:00:00 AM	1	\$2,024.99	\$0.00	202
4	43659	676			\$2,039.99	\$0.00	203
5	43659	676			\$28.84	\$0.00	28
6	43659	676			\$2,024.99	\$0.00	202
7	43659	676			\$5.19	\$0.00	1

DistinctOrders: 31,465.00
 SumLineTotal: \$109,846,381...
 AvgPerOrder: \$3,491.07
 PeriodSales: \$109,846,381....
 Sales: \$109,846,381.40
 InternetSales: \$29,358,677...

Use the formula bar similar to Excel but use DAX functions, here we are using some of the Time-Intelligent functions

Measures in the PivotTable

	A	B	C	D	E	F	G	H	I
1	Date	09							
2									
3	PeriodSales	Column Labels							
4	Row Labels	Current	LastYear	MTD	PriorYearMTD	QTD	PriorYearQTD	YTD	PriorYearYTD
5	7/9/2004								
6	⊕ Europe	\$308.63	\$16,056.57	\$3,140.81	\$508,392.45	\$3,140.81	\$508,392.45	\$6,759,815.77	\$2,707,664.66
7	⊖ North America	\$572.99	\$3,475.16	\$8,662.71	\$2,284,621.97	\$8,662.71	\$2,284,621.97	\$15,728,354.75	\$13,918,143.71
8	⊕ CA	\$133.53	\$2,319.99	\$3,266.22	\$514,561.88	\$3,266.22	\$514,561.88	\$3,056,302.24	\$2,982,858.66
9	⊖ US	\$439.46	\$1,155.17	\$5,396.49	\$1,770,060.09	\$5,396.49	\$1,770,060.09	\$12,672,052.50	\$10,935,285.06
10	Central				\$216,803.66		\$216,803.66	\$1,323,769.09	\$1,476,757.18
11	Northeast				\$190,499.66		\$190,499.66	\$1,059,022.59	\$1,715,250.06
12	Northwest	\$248.39		\$3,307.76	\$402,987.80	\$3,307.76	\$402,987.80	\$3,918,788.09	\$2,166,645.87
13	Southeast			\$38.98	\$177,763.10	\$38.98	\$177,763.10	\$1,181,679.14	\$1,253,029.36
14	Southwest	\$191.07	\$1,155.17	\$2,049.75	\$782,005.86	\$2,049.75	\$782,005.86	\$5,188,793.60	\$4,323,602.58
15	⊕ Pacific	\$163.98				\$2,479.96	\$136,613.48	\$3,304,034.43	\$1,341,568.22
16	Grand Total	\$1,045.60				\$14,283.48	\$2,929,627.91	\$25,792,204.95	\$17,967,376.59

The calculated fields become "measures" to place in the Values area

3D Map (Power Map)

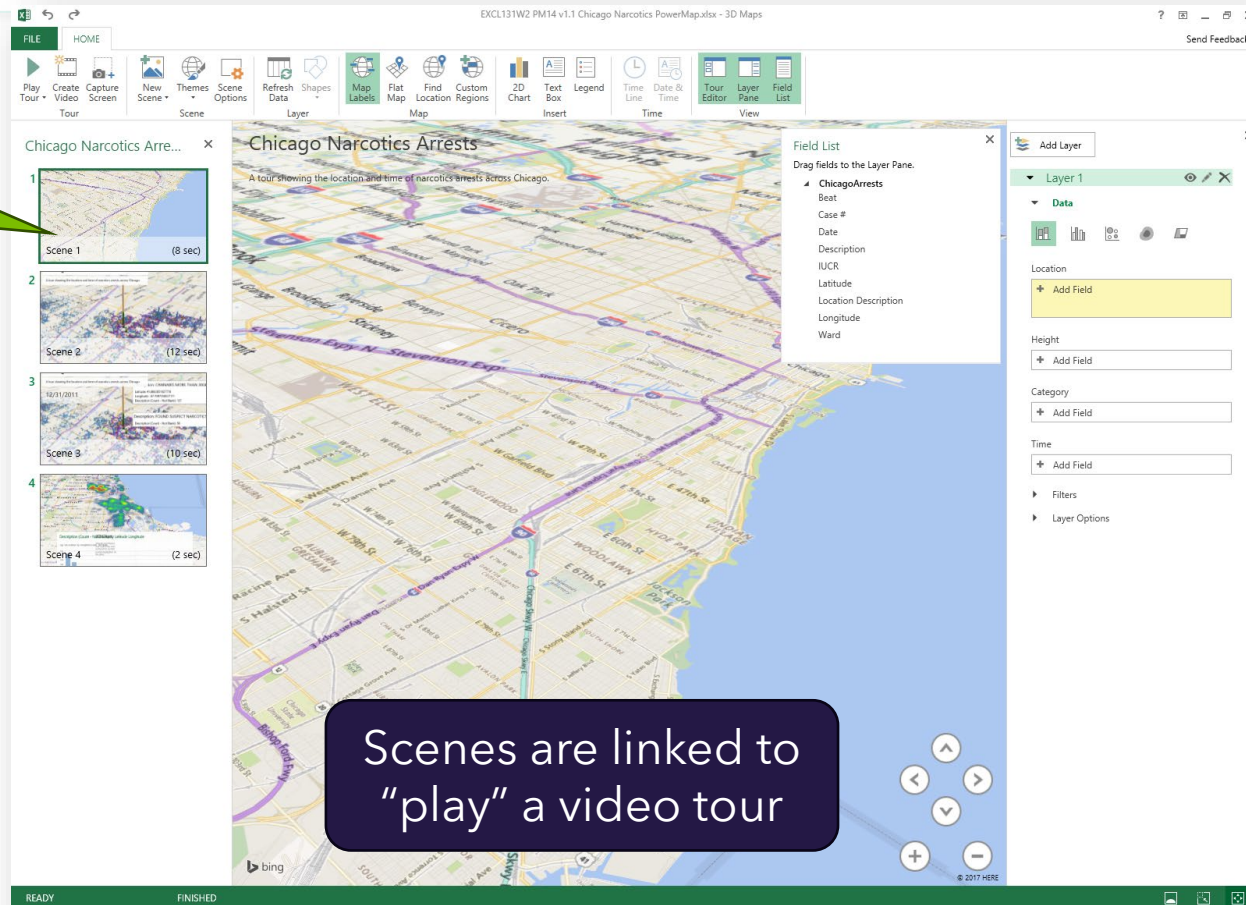


Insert - 3D Map

The image shows a screenshot of the Power BI ribbon with the '3D Map' group selected. The 'Open 3D Maps' option is circled in red, and a red arrow points from it to the 'Launch 3D Maps' dialog box. The dialog box contains a map preview, an 'Open...' button, and a list of data sources: 'Chicago', 'Narcotics', and 'Arrests'. A tooltip points to the 'Open...' button with the text 'Open this tour to edit or play it.'. Below the map preview is a section labeled 'Tour 1'. At the bottom of the dialog is a '+ New Tour' button. A green callout bubble on the right contains the text: 'Map is called "Tour" and will display once created'.

Power Map (3D Map) Interface

Build map
"Scenes"



Scenes are linked to
"play" a video tour

Play Tour of Map



Power BI Desktop



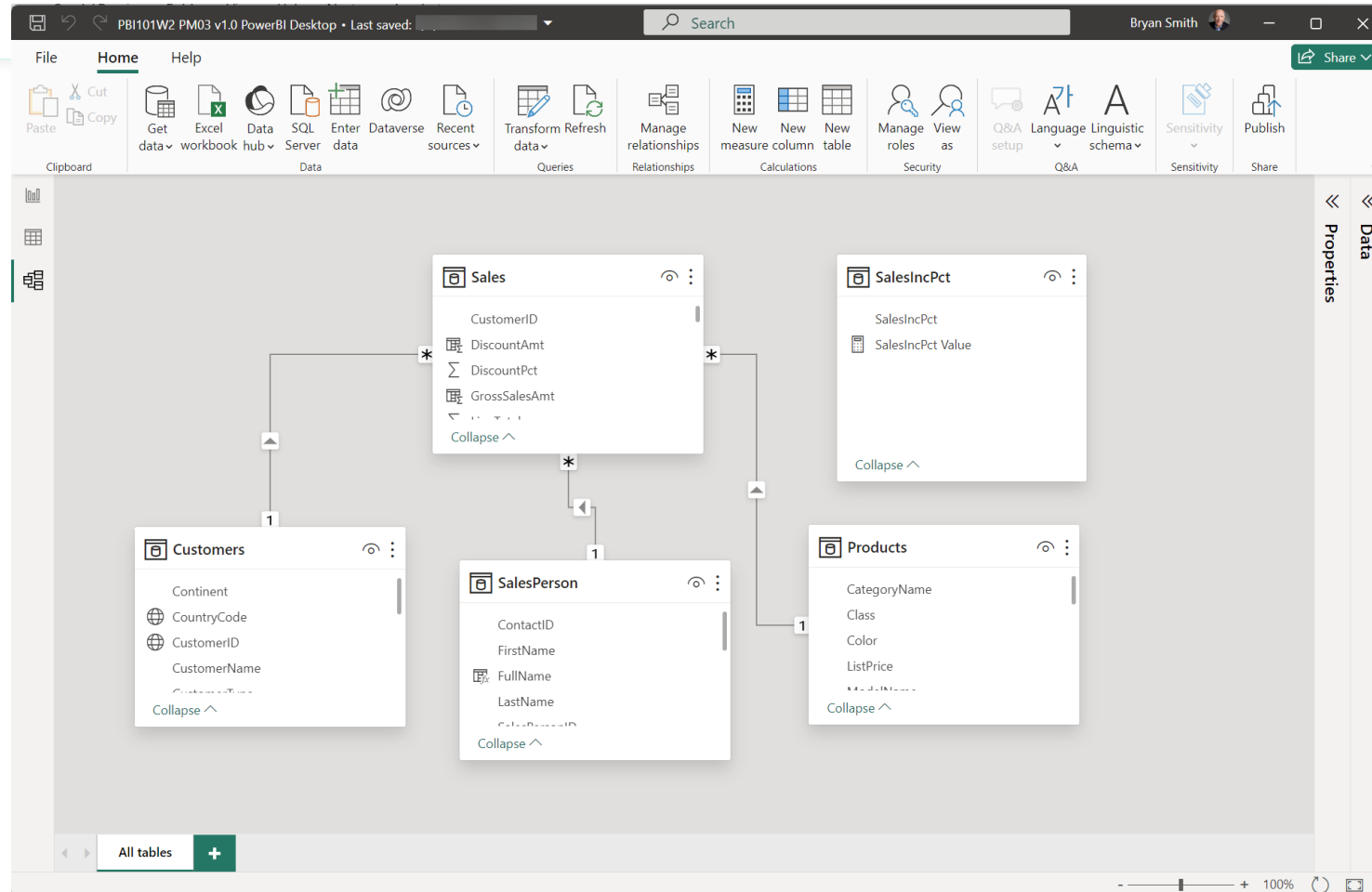
Power BI Desktop Data Model

The screenshot displays the Power BI Desktop interface. The main window shows a table with the following columns and data:

SalesOrderID	CustomerID	ProductID	OrderDate	OrderQty	UnitPrice	DiscountPct	LineTotal	SalesPersonID	GrossSalesAmt	DiscountA
51178	11245	870	7/1/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51180	16313	870	7/1/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51191	12390	870	7/2/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51196	18906	870	7/2/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51197	11448	870	7/2/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51198	11006	870	7/2/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51199	21440	870	7/2/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51203	18208	870	7/3/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51205	11240	870	7/3/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51206	11400	870	7/3/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51207	11338	870	7/3/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51214	19765	870	7/3/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51216	11117	870	7/3/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51223	26826	870	7/3/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51228	11402	870	7/4/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51230	11292	870	7/4/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51237	11061	870	7/4/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51246	25625	870	7/4/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51247	11249	870	7/5/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51249	11334	870	7/5/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51250	19360	870	7/5/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51259	11433	870	7/5/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51260	25618	870	7/5/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51262	11340	870	7/6/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51267	11456	870	7/6/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51282	11008	870	7/7/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51291	11447	870	7/8/2003	1	\$4.990	0.00%	\$4.99		\$4.99	
51298	27949	870	7/8/2003	1	\$4.990	0.00%	\$4.99		\$4.99	

The interface also shows a 'Table tools' ribbon with options like 'Mark as date table', 'Manage relationships', and 'New measure'. The 'Data' pane on the right lists the tables in the model: Customers, Products, Sales, SalesIncPct, and SalesPerson.

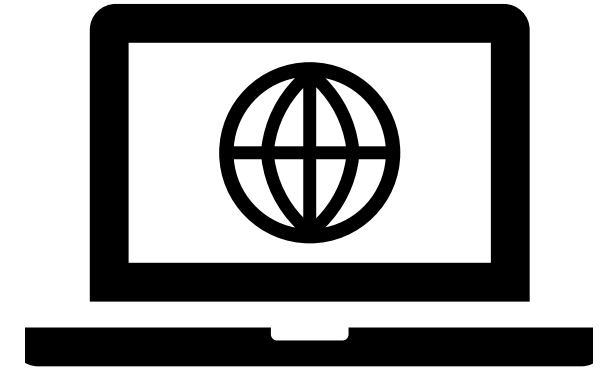
Power BI Desktop Relationships



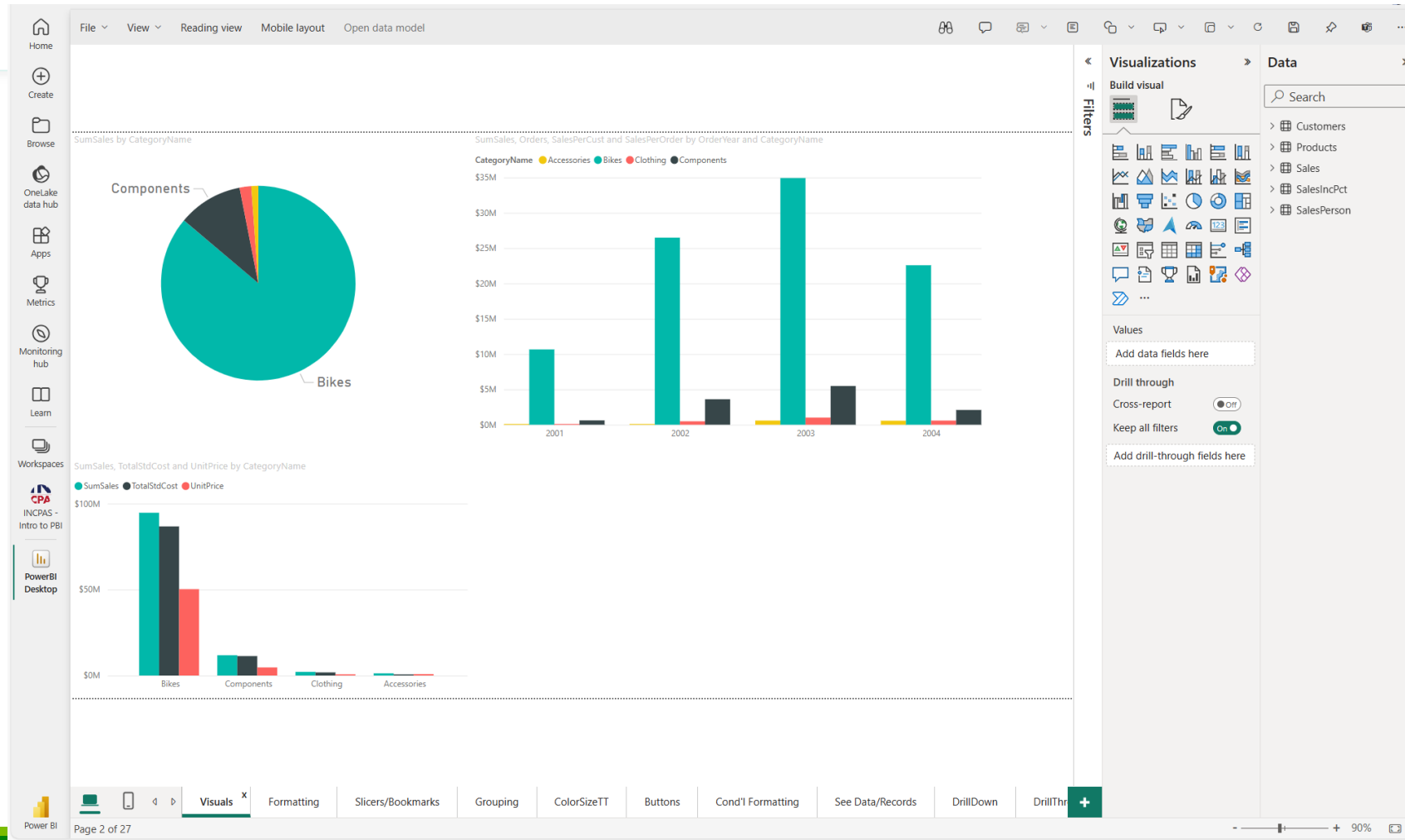
Power BI Desktop Visuals

The screenshot displays the Power BI Desktop interface. The top ribbon includes tabs for File, Home, Insert, Modeling, View, Optimize, and Help. The main workspace contains three visualizations: a pie chart titled 'Components' showing the distribution of sales across categories, a grouped bar chart showing sales from 2001 to 2004, and a grouped bar chart comparing 'SumSales', 'TotalStdCost', and 'UnitPrice' for different categories. The 'Visualizations' pane on the right offers a 'Build visual' section with a search bar and a grid of visualization icons. A green callout bubble points to this pane with the text 'Lots of Visualization choices'. The bottom status bar shows 'Page 2 of 27', 'Page 1', and various view options like 'Visuals', 'Formatting', 'Slicers/Bookmarks', etc.

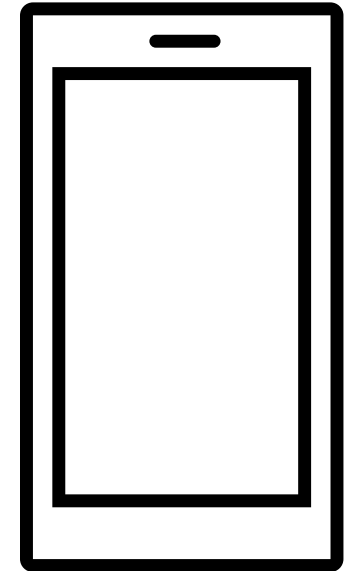
PowerBI.com



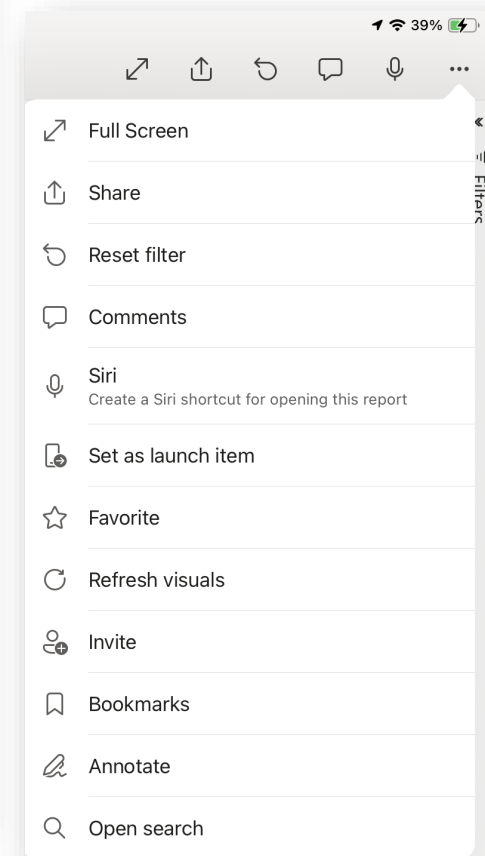
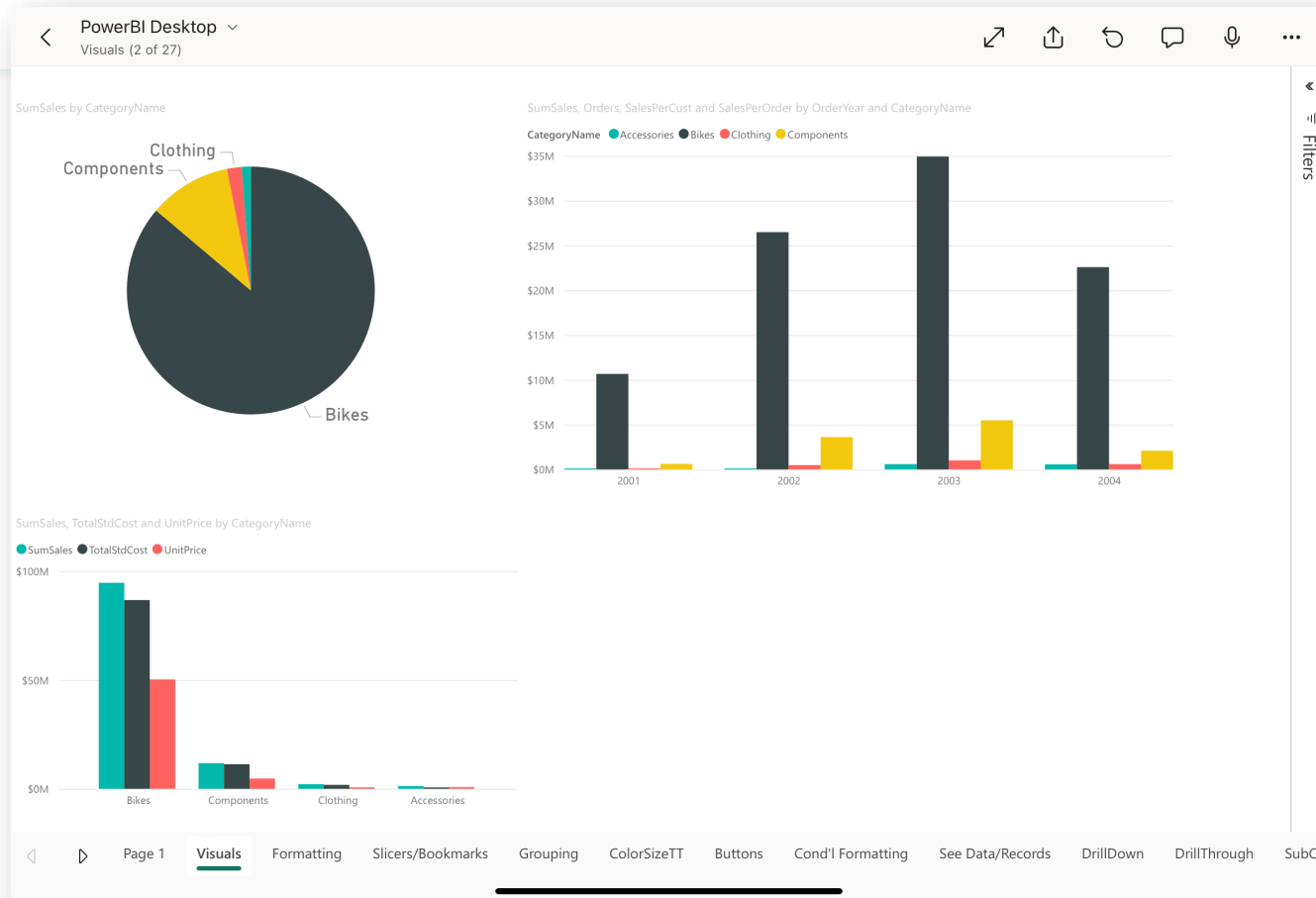
PowerBI.com Interface



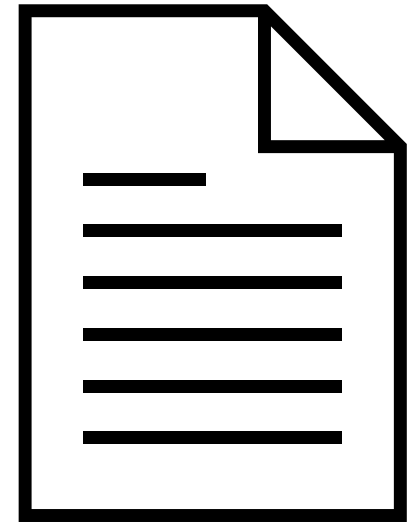
Power BI Mobile



Power BI Mobile Interface



Power BI Report Builder



Power BI Report Builder Interface

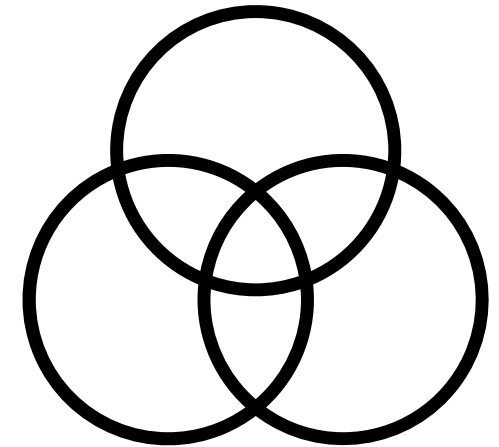
The screenshot displays the Power BI Report Builder interface for a report titled 'Buying Group Account Statement'. The interface includes a top navigation bar with 'Power BI', 'My Workspace', and 'WWI - Account Statement v2'. Below this is a filter bar showing 'Buying Group' set to 'Tailspin Toys', 'Location' set to 'Absecon, NJ, Aceituna...', 'Invoices From Date' set to '05/01/2016', and 'Invoices To Date' set to '05/31/2016'. A 'View Report' button is visible on the right.

The report content shows the following details:

- Buying Group Account Statement**
- Invoice Range: May 01, 2016 to May 31, 2016
- Buying Group: Tailspin Toys, 201 Customers Selected
- Address: Floor 20, Import Plaza, 105 Silk Road, Tradesville, WA 99999
- Wide World Importers logo
- Invoice No: 73507-70431**
- Invoice 2 of 3
- Invoice Date: May 31, 2016; Delivery Time: (blank)
- Purchase Order No: 16826; Received By: (blank)
- Billed To: Tailspin Toys (Head Office)
- Delivery Information: Suite 150, 1959 Sarma Road

Item	Quantity	Unit Price	Tax	LineTotal
DBA joke mug - you might be a DBA if (White)	7	\$13.00	\$13.65	\$104.65
Ogre battery-powered slippers (Green) XL	8	\$32.00	\$38.40	\$294.40
Packing knife with metal insert blade (Yellow) 18mm	15	\$2.40	\$5.40	\$41.40
"The Gu" red shirt XML tag t-shirt (White) 3XS	48	\$18.00	\$129.60	\$993.60
TOTAL			\$187.05	\$1,434.05

Comparative Analysis



Excel Power BI Tools

Limitations

- Need current version of Excel
- Need to run 64-bit version
 - May require uninstall and reinstall of all Office products
- Need to know Excel and PivotTables
- May have stability issues
- May not have all the DAX functions

Strengths

- Familiar interface for Excel users
- Included with Excel if you have the correct version of Office
- Don't have to install another app on all user's computers
- Build data model in Excel and share with PowerBI.com
- Allows the use of OLAP (Online Analytical Processing) features/functions

Power BI Desktop

Limitations

- Requires installation of a new app on all computers
- IT may not allow installation
- Need to learn something new
- No PivotTables for Excel “experts”
- PivotTables are easier to use when validating calculations

Strengths

- Don’t need to be an Excel “expert”
- Don’t have to worry about Office version
- Can install 64-bit version even when your Office version is 32-bit
- More stable than Excel and Power Pivot
- Monthly updates
- More data connectors

Power BI Services (PowerBI.com)

Limitations

- Hosted by Microsoft
- Need the \$10/month Pro version to be useful
- Sharing with others requires them to have Pro version
- Configuration can be complicated in enterprise environments
- Need to build Data Model in another tool

Strengths

- Ability to share work
 - Reports
 - Dashboards
 - Data Models
- Can build Data Model in Power Pivot and then visuals on PBI.com
- Maintain multiple Data Models in one place

Which Power BI Tool is Right for You?

Power Pivot

- Own the correct version of Excel
- Have a “high-powered” computer
 - Fast processor, lots of RAM
- Want to stick with Excel
- Rely heavily on PivotTables
- Don’t want to install another application

Power BI Desktop

- Don’t have the correct version of Excel
- Not an Excel “expert”
- Willing to learn something new
- Want the latest and greatest
- Need the formula functions that aren’t available in Power Pivot

Wrap-Up



Presentation Wrap-Up

Microsoft provides Excel and stand-alone tools

Knowledge gained is transferable to other tools

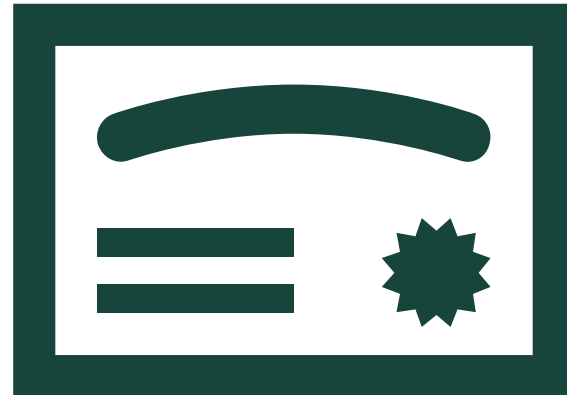
Access large amounts of data very fast

Tools provide data modeling, measures, visualizations and sharing

Use Power BI Services to share data models

Questions?





Thank You!!



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ONE FINAL NOTE