

POWER BI

SHARED BY: THUNNM



Top	2,781	\$1.13
Steel	7,040	\$2.27
Choice	6,815	\$2.31
Alloy	5,851	\$2.28
Quality	6,272	\$2.23
Wing	6,433	\$2.12
Flare	6,433	\$2.23
Flare	6,433	\$2.23
Time	6,433	\$2.18
West	6,433	\$2.12
by	6,433	\$2.46
region	6,433	\$2.09
line	6,433	\$2.12
to	6,433	\$2.12
set	6,067	\$1.92
on	5,556	\$2.06
on	6,433	\$2.12

COURSE OUTLINE



1. Introducing Power BI Desktop

2. Connecting & Shaping Data

3. Creating a Data Model

4. Adding Calculated Fields with DAX

5. Visualizing Data with Reports

- *Installing Power BI, exploring the Power BI workflow, comparing Power BI vs. Excel, etc.*
- *Connecting to source data, shaping and transforming tables, editing, merging and appending queries, etc.*
- *Building relational models, creating table relationships, understanding cardinality, exploring filter flow, etc.*
- *Understanding DAX syntax, adding calculated columns and measures, writing common formulas & functions, etc.*
- *Inserting charts and visuals, customizing formats, editing interactions, applying filters and bookmarks, etc.*

INTRODUCING THE COURSE

1. THE BRIEF

- Your client needs a way to **track KPIs** (*sales, revenue, profit, returns*), **compare regional performance**, **analyze product-level trends and forecasts**, and **identify high-value customer**.

2. THE OBJECTIVE

- **Use Power BI Desktop to:**
 - ✓ Connect and transform the raw data
 - ✓ Build a relational data model
 - ✓ Create new calculated columns and DAX measures
 - ✓ Design an interactive report to analyze and visualize the data

DAY 2 – INTRODUCING POWER BI DESKTOP

BUSINESS INTELLIGENCE PLATFORMS

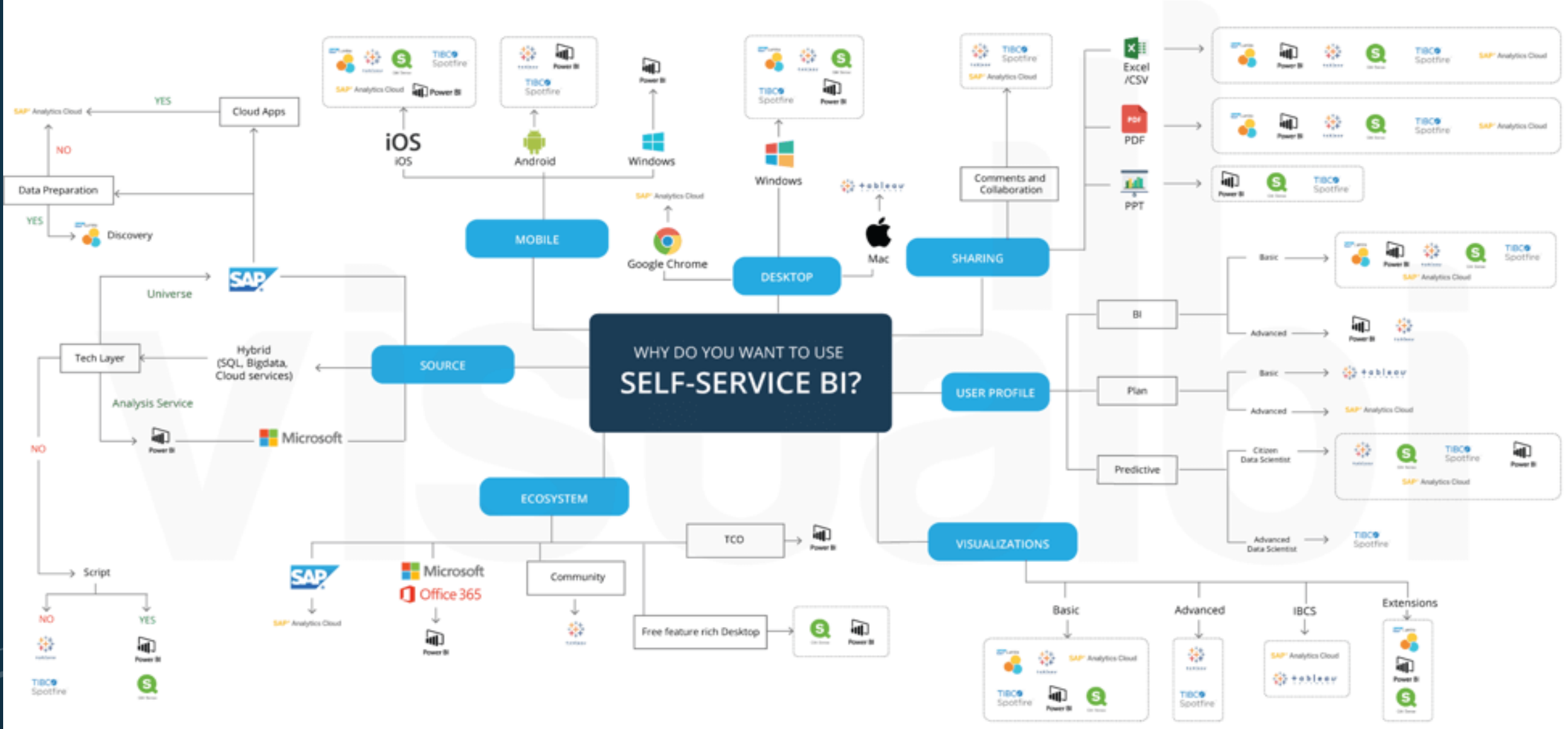
- Modern analytics and BI platforms are now mainstream purchases.
- This Magic Quadrant will help data and analytics leaders complement their existing solutions or move to an entirely new vendor.



Source: [Magic Quadrant for Analytics and Business Intelligence Platforms](#)

Self-Service BI : Decision Tree

Recommendations



BUSINESS INTELLIGENCE TOOLS



Open Source BI Tools



Enterprise BI Tools

Business Intelligence tools help organizations to improve their decision making & social collaboration. It provides the means for efficient reporting, thorough analysis of data, statistics & analytics.

OBJECTIVE

- *Installing Power BI, exploring the Power BI workflow, comparing Power BI vs. Excel, etc.*

AGENDA

01

Power Bi

Define,

The parts of PBI,

Pricing

02

Installing PBI Desktop

Definition,

Tips

PART 1 – POWER BI

WHAT IS POWER BI?



Power BI is a business analytics solution that lets you *visualize your data* and share insights across your organization, or embed them in your app or website by Microsoft.



Connect to hundreds of data sources and bring your data to life with live dashboards and reports.



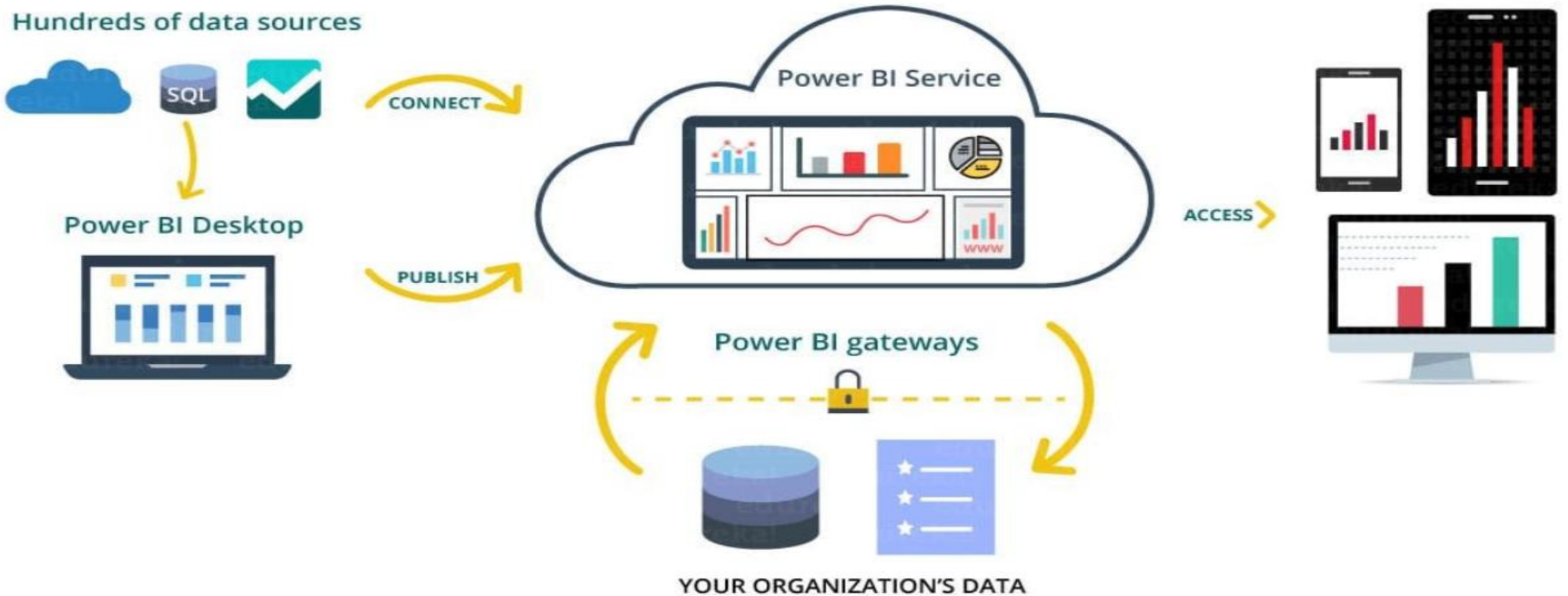
Power BI is a user-friendly tool offering impressive drag-and-drop features and self-service capabilities.



Three types of Power BI platforms:

- Power BI Desktop (A desktop application)
- Power BI Service (SaaS i.e., Software as a Service)
- Power BI Mobile (For iOS and Android devices)

MICROSOFT POWER BI – PROCESS FLOW



MICROSOFT POWER BI – COMPONENTS

Key Components of Power BI – On Premise

Power Query

Discover



- ❖ Search organizational and Public (Cloud) data
- ❖ Import, merge, shape and cleanse Data
- ❖ Manage Shared Queries and Certify Queries

Power Pivot

Analyze



- ❖ Create in-memory data model
- ❖ Create hierarchies and KPI's
- ❖ Create derived fields and calculations

Power View

Visualize



- ❖ Analyze, visualize and display data
- ❖ Interactive data visualization tool
- ❖ Delivers intuitive ad-hoc reporting for business users

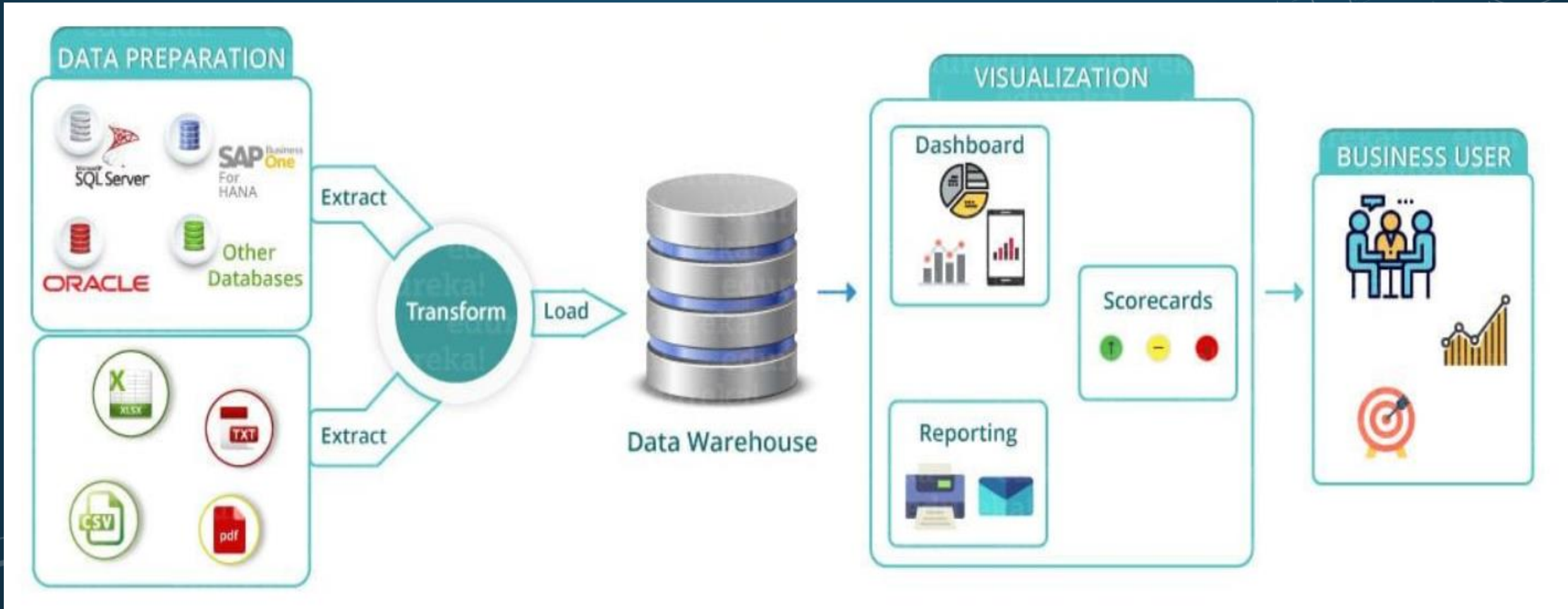
Power Map

Map



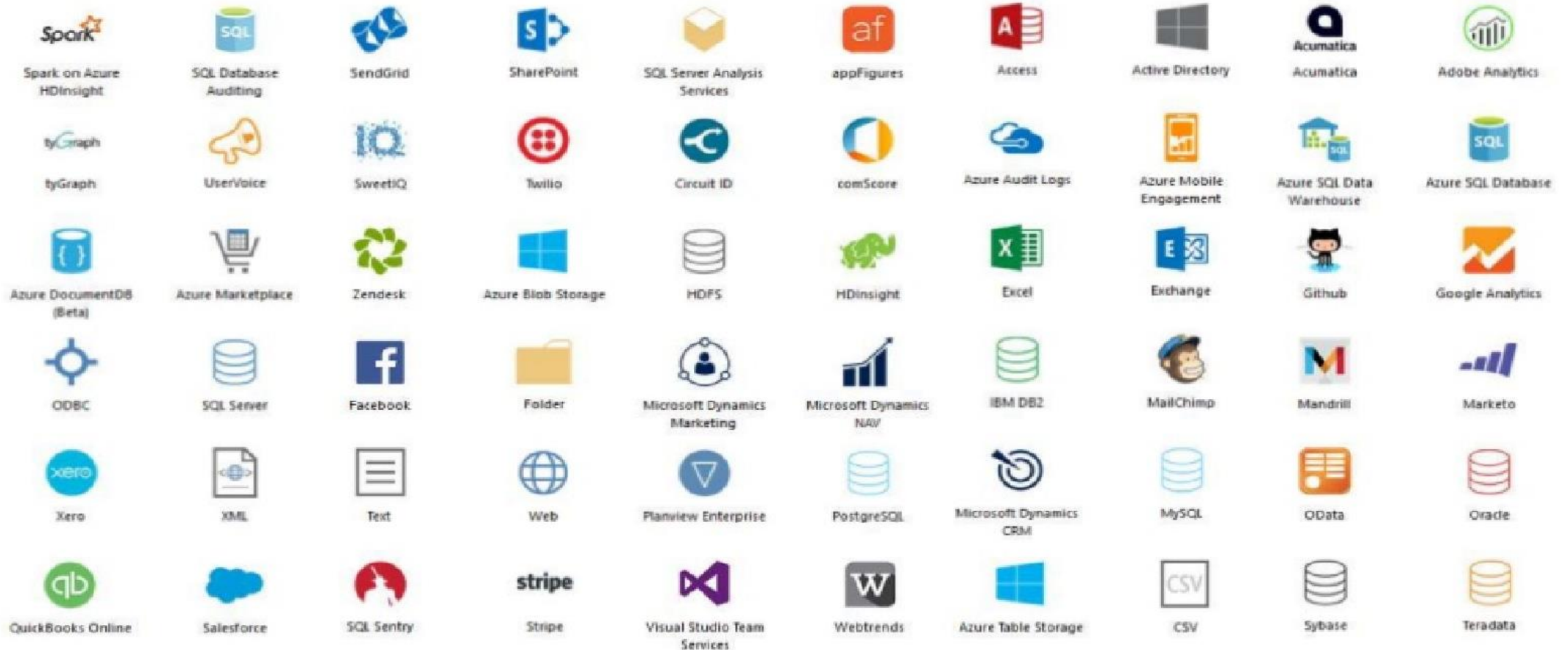
- ❖ Create maps and tours of data
- ❖ Enables story telling using 3-D data
- ❖ Uses "Bing Map Service"

MICROSOFT POWER BI – ARCHITECTURE



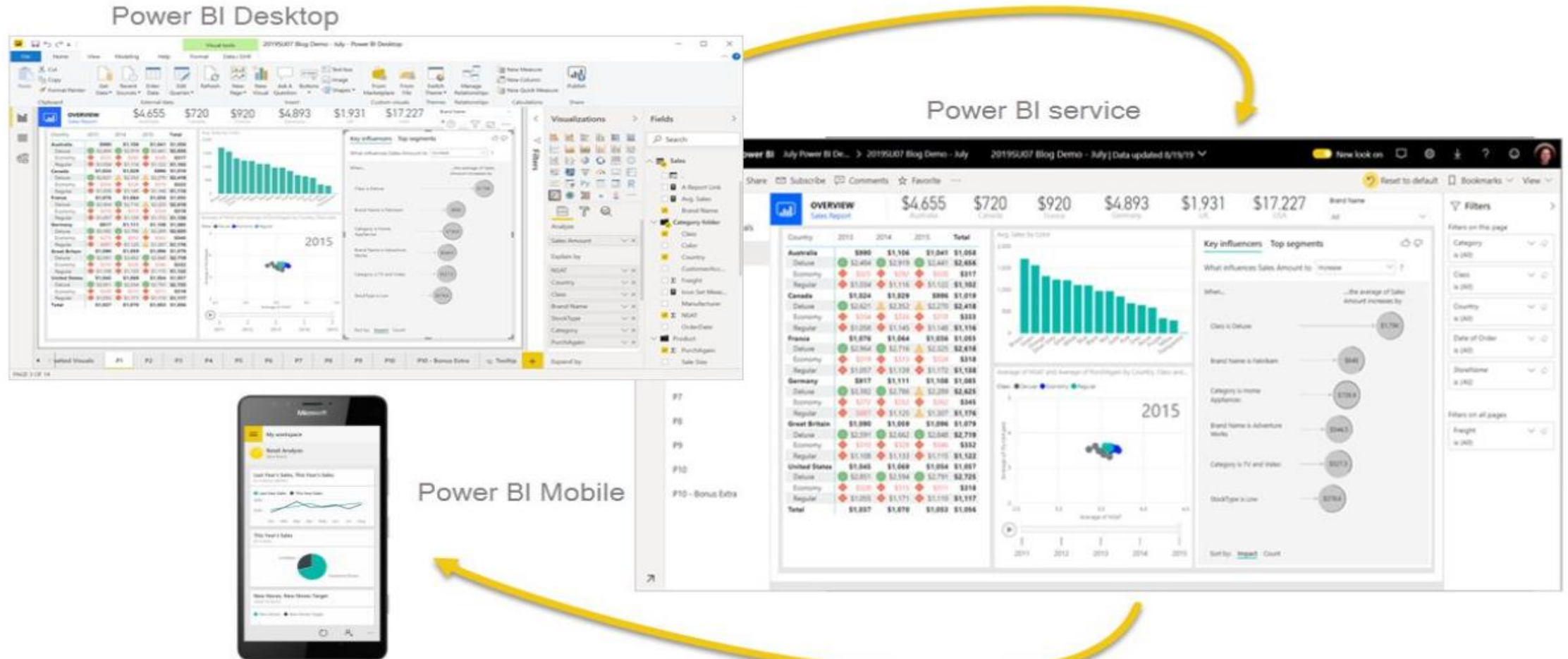
MICROSOFT POWER BI – DATA CONNECTIONS

60+ Data Connectors

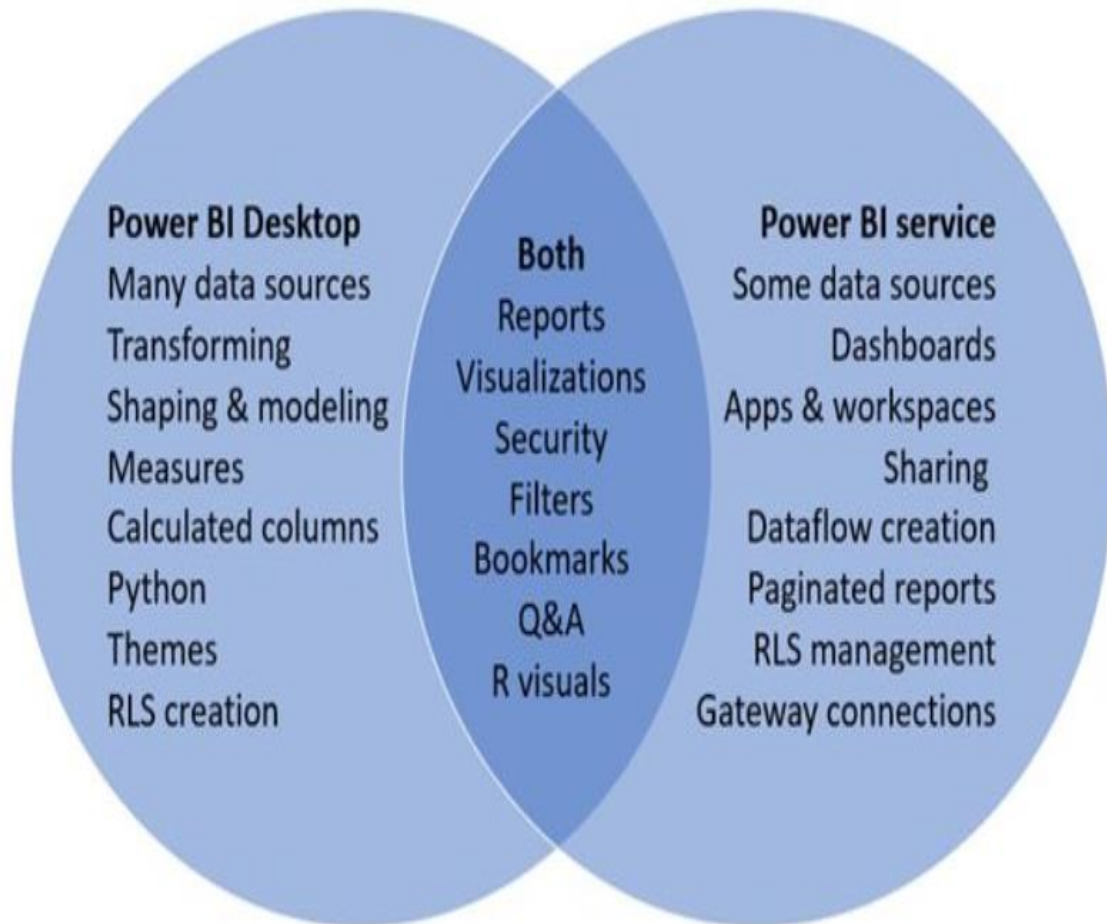


Source: [Webinar: Creating a Data-Driven Enterprise Using Microsoft Power BI](#)

THE PARTS OF POWER BI

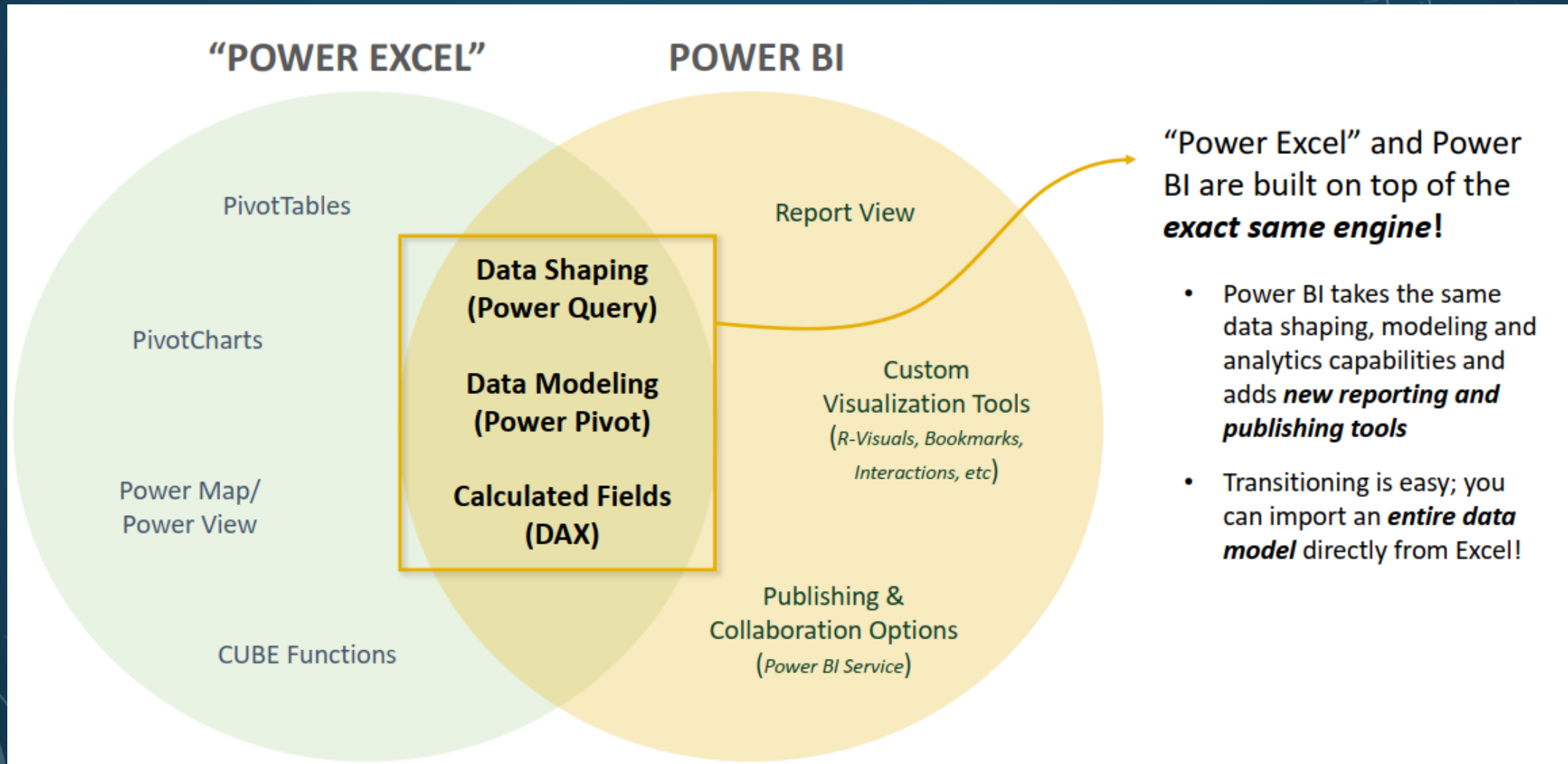


THE PARTS OF POWER BI



- Power BI Desktop is a complete data analysis and report creation tool that you install for free application on your local computer.
- The Power BI service is a cloud-based service. It supports light report editing and collaboration for teams and organizations. You can connect to data sources in the Power BI service, too, but modeling is limited.
- Most report designers who work on business intelligence projects use Power BI Desktop to create reports, and then use the Power BI service to distribute their reports with others.

POWER BI VS EXCEL



Power BI

Power BI Desktop



- Get Data from 40+ Sources
- Bookmarks
- Quick Measures
- New Tables
- New Columns
- Reports View
- Filter & Sort in Data View
- Query Editor
- Ask a question
- New Measures
- Themes
- Desktop Layout
- Tables View
- Lock Objects
- Selections
- Sync Slicers
- New Parameter
- What If Parameter
- Roles
- Phone Layout
- Relationships View

Power BI Service



- ### Free
- Export Data
 - Data Limit 10 GB/User
 - 1 GB Dataset
 - Dashboard Themes
 - Ask a question about your data
 - Natural Language Query (Q&A)
 - Microsoft SQL Server Reporting Services Tiles pinned from SSRS
 - Consume live data sources (DirectQuery)
 - Consume Content that's scheduled to refresh Hourly (Can schedule 8 refreshes)
 - Access Datasets in Power BI Service
 - Consume streaming data 1M rows/Hour
 - Access On-Premise data using Personal or On-Premise Data Gateway
 - Control data access with Row Level Security for Users & Groups
 - Persistent Filters
 - Publish to Web
 - Mobile Devices (iOS, Windows, Android)
 - Custom Data Connectors

- ### Pro (0 - 500 Users) (e)
- Create, View & Share Personal Dashboards & Reports
 - Apps & App Workspaces
 - Usage Metrics (With User Details)
 - Analyze in Excel
 - Subscribe others to Dashboards & Reports (My Workspace & Apps)
 - SharePoint Modern Web Parts
 - Create, publish & View Organizational Content Packs

- ### Premium (500 + Users) (e)
- Dedicated Node Capacity
 - Incremental Refresh
 - 100TB of Storage for each Capacity Provisioned
 - Higher refresh rates up to 48 per day
 - Noisy Neighbour Isolation
 - Future Release
 - Pinning Datasets to Memory
 - Read-Only Replicas
 - Dedicated Data Refresh Nodes
 - Large datasets
 - Geographic Distribution

On-Premise



(e) - Estimated Users
(P) - Premium Features



MICROSOFT POWER BI – PRICING

Do you need self-service BI?

Choose Power BI Pro

- Self-service and modern BI in the cloud
- Collaboration, publishing, sharing, and ad-hoc analysis
- Fully managed by Microsoft

Power BI Pro

\$9.99

Monthly price per user

[Buy now>](#)

[Try free >](#)

Do you need advanced analytics, big data support, and on-premises and cloud reporting?

Add Power BI Premium

- Enterprise BI, big data analytics, cloud and on-premises reporting
- Advanced administration and deployment controls
- Dedicated cloud compute and storage resources
- Allows any user to consume Power BI content

Power BI Premium

\$4,995

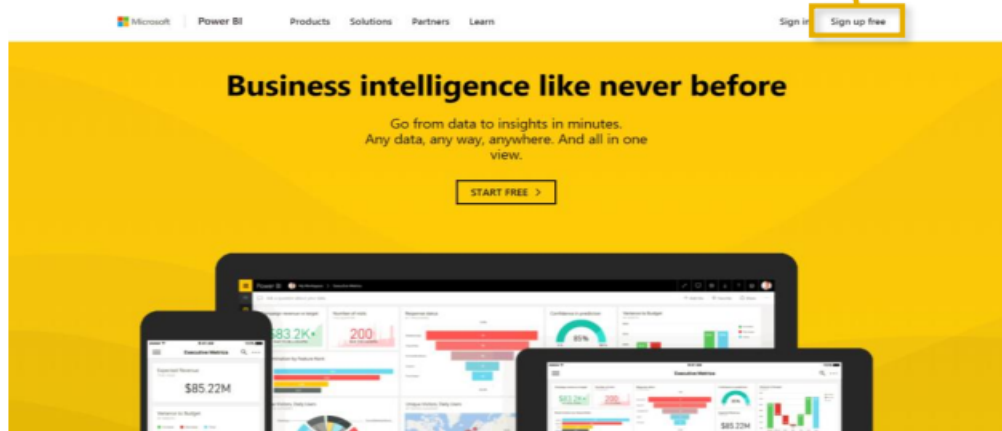
Monthly price per dedicated cloud compute and storage resource with annual subscription

[Request a consultation >](#)

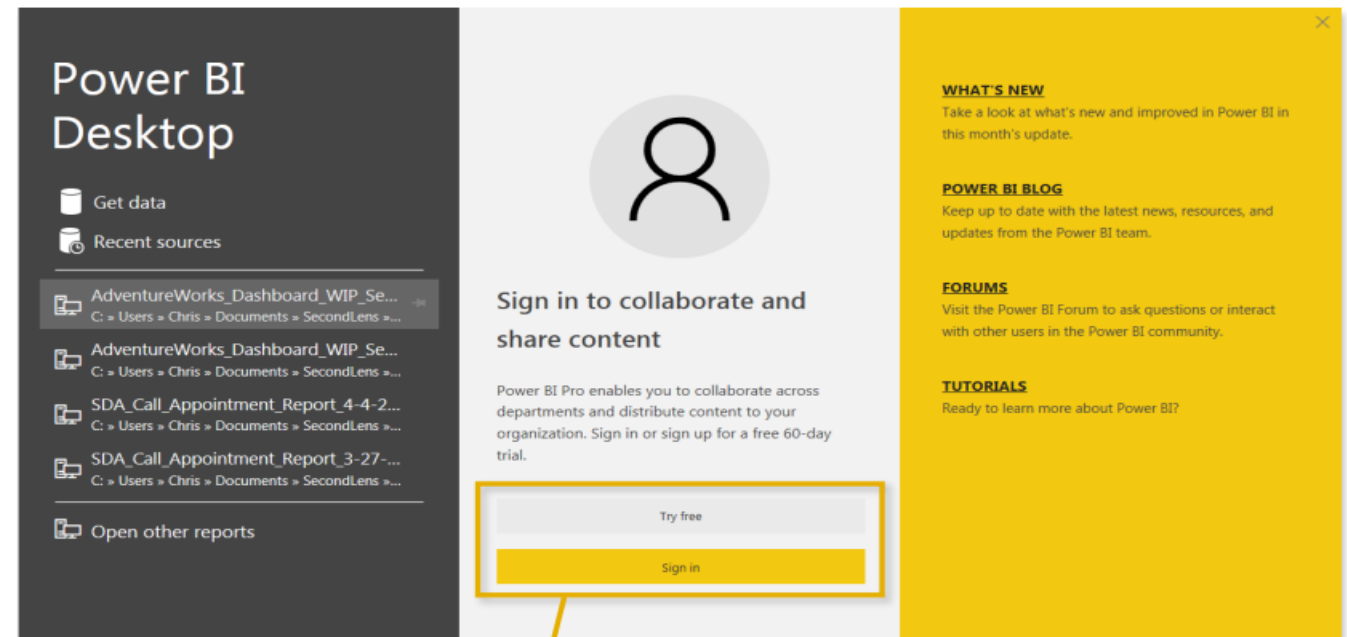
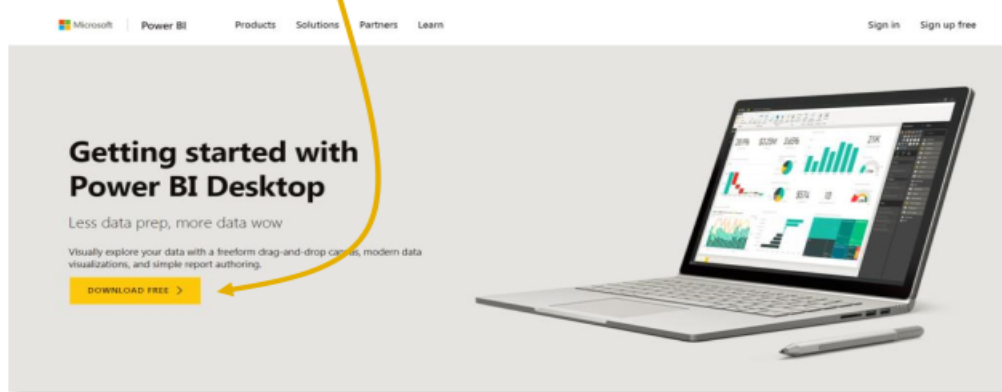
PART 2 – INSTALLING PBI DESKTOP

INSTALLING

1) Head to powerbi.microsoft.com and click “Sign Up Free”



2) Click “Download Free” to start the Power BI Desktop download

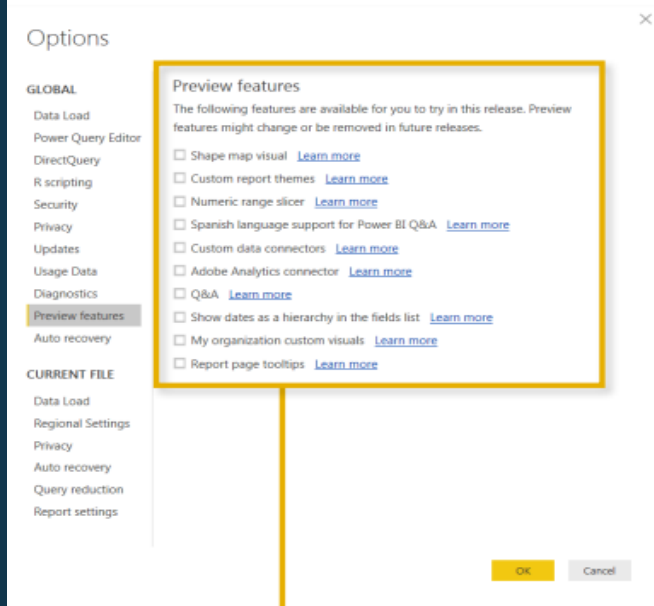


IMPORTANT: You do **not** need to sign in or register for a Power BI Pro account to access Power BI Desktop (*you can simply close this window*)

- Sign-in is only required to access the sharing and collaboration tools available through Power BI Service (app.powerbi.com)
- **Note:** Microsoft requires a **work** or **school** e-mail address

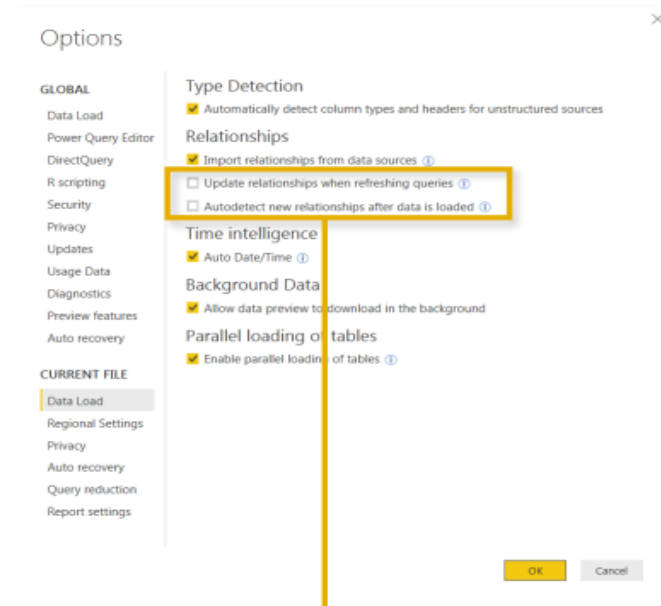
OPTIONS & SETTINGS

PREVIEW FEATURES



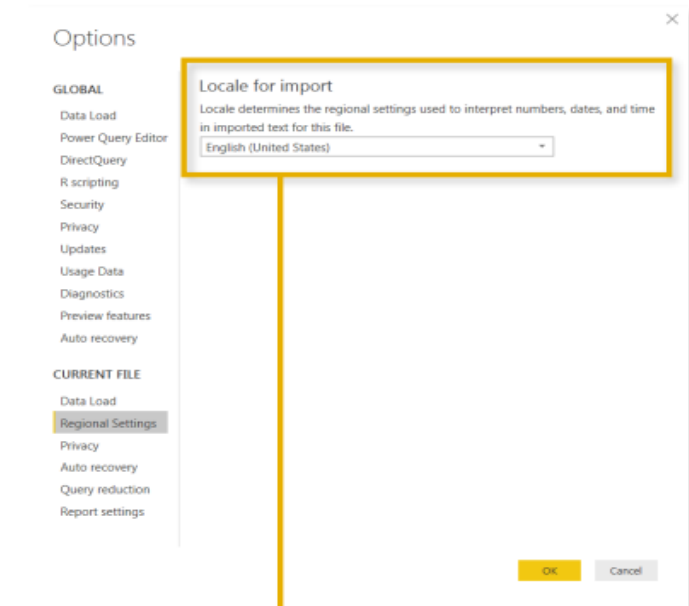
1) In the “**Preview Features**” tab, deselect any active features while you are taking the course

DATA LOAD



2) In the “**Data Load**” tab, deselect the “*Update relationships*” and “*Autodetect new relationships after data is loaded*” options

REGIONAL SETTINGS



3) In the “**Regional Settings**” tab, make sure to use the “*English (United States)*” locale for import

NOTE: You may need to update settings in both the **Current File** and **Global** sections

THE POWER BI INTERFACE

Three Core Views:

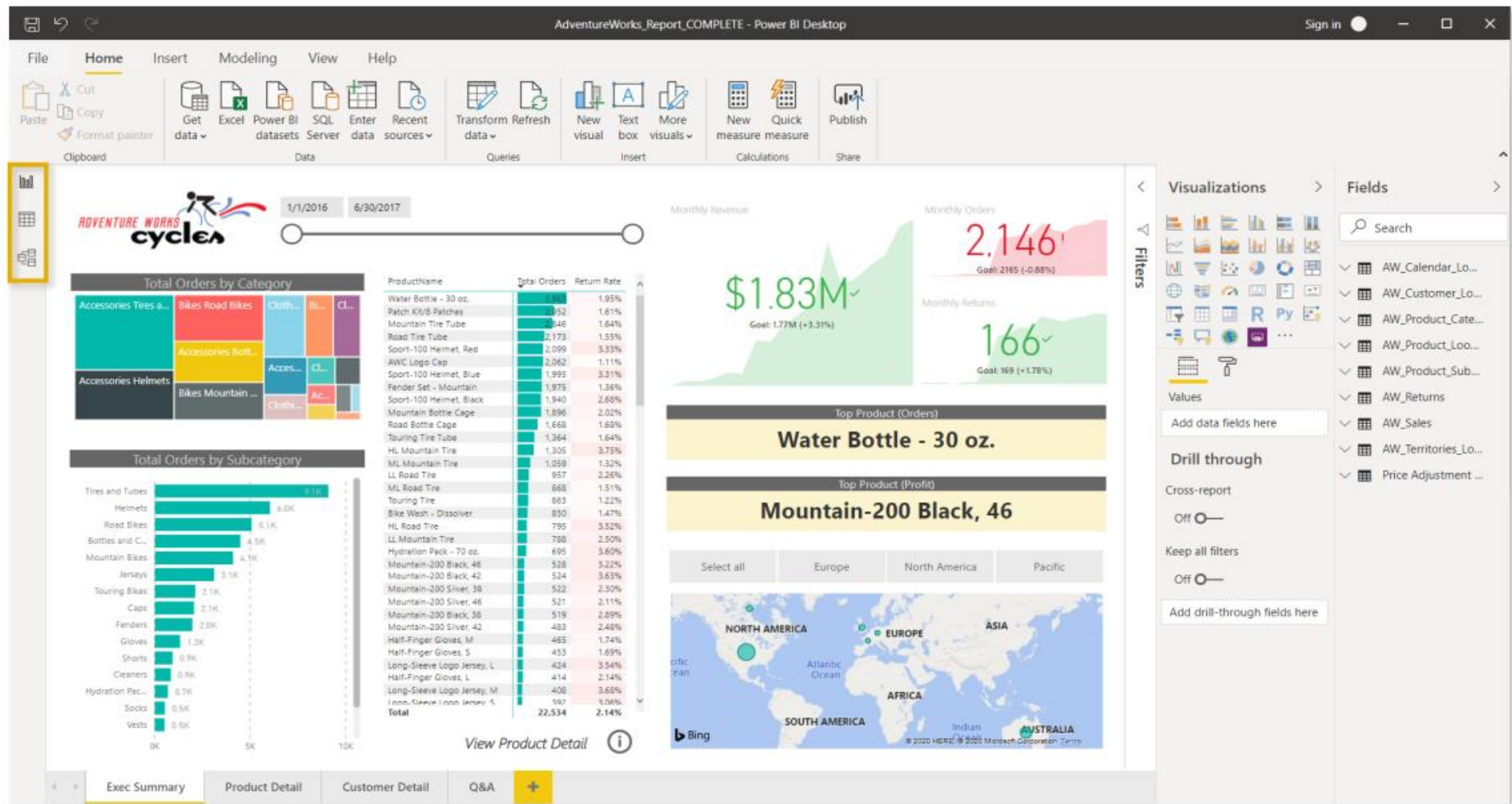
Report



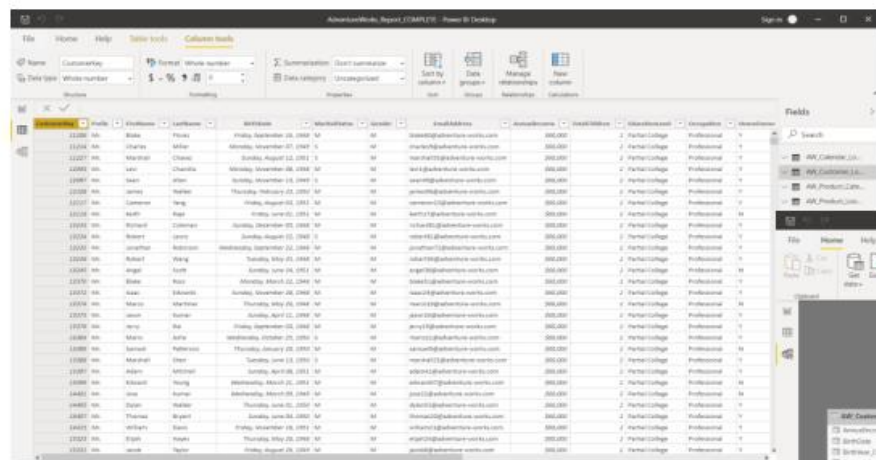
Data



Relationships
(aka Model)



THE POWER BI WORKFLOW

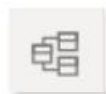
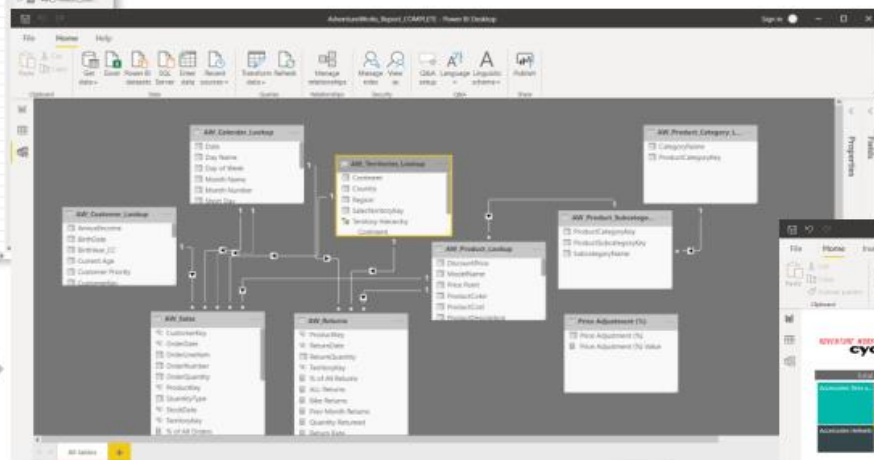


A screenshot of the Power BI Desktop interface showing a table of customer data. The table has columns for CustomerID, Name, State, BirthDate, Gender, MaritalStatus, Education, Occupation, and Salary. The data is filtered to show customers from the United States, with a total of 1000 records displayed.

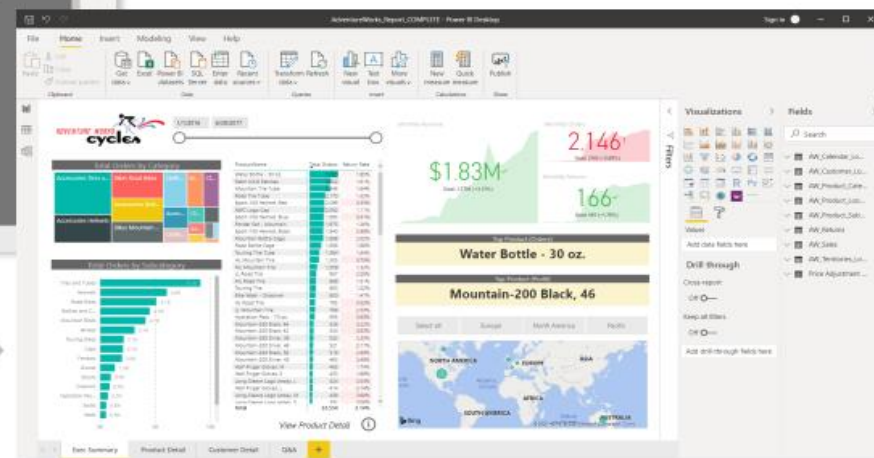
CustomerID	Name	State	BirthDate	Gender	MaritalStatus	Education	Occupation	Salary
22222	Mr. Charles	Florida	Friday, September 05, 1968	M	Married	High School	Professional	100,000
22223	Mr. Charles	Florida	Monday, September 07, 1968	M	Married	High School	Professional	100,000
22224	Mr. Charles	Florida	Thursday, September 10, 1968	M	Married	High School	Professional	100,000
22225	Mr. Charles	Florida	Sunday, September 13, 1968	M	Married	High School	Professional	100,000
22226	Mr. Charles	Florida	Wednesday, September 16, 1968	M	Married	High School	Professional	100,000
22227	Mr. Charles	Florida	Saturday, September 19, 1968	M	Married	High School	Professional	100,000
22228	Mr. Charles	Florida	Tuesday, September 22, 1968	M	Married	High School	Professional	100,000
22229	Mr. Charles	Florida	Friday, September 25, 1968	M	Married	High School	Professional	100,000
22230	Mr. Charles	Florida	Monday, September 28, 1968	M	Married	High School	Professional	100,000
22231	Mr. Charles	Florida	Thursday, October 01, 1968	M	Married	High School	Professional	100,000
22232	Mr. Charles	Florida	Sunday, October 04, 1968	M	Married	High School	Professional	100,000
22233	Mr. Charles	Florida	Wednesday, October 07, 1968	M	Married	High School	Professional	100,000
22234	Mr. Charles	Florida	Saturday, October 10, 1968	M	Married	High School	Professional	100,000
22235	Mr. Charles	Florida	Tuesday, October 13, 1968	M	Married	High School	Professional	100,000
22236	Mr. Charles	Florida	Friday, October 16, 1968	M	Married	High School	Professional	100,000
22237	Mr. Charles	Florida	Monday, October 19, 1968	M	Married	High School	Professional	100,000
22238	Mr. Charles	Florida	Thursday, October 22, 1968	M	Married	High School	Professional	100,000
22239	Mr. Charles	Florida	Sunday, October 25, 1968	M	Married	High School	Professional	100,000
22240	Mr. Charles	Florida	Wednesday, October 28, 1968	M	Married	High School	Professional	100,000
22241	Mr. Charles	Florida	Saturday, November 01, 1968	M	Married	High School	Professional	100,000
22242	Mr. Charles	Florida	Tuesday, November 04, 1968	M	Married	High School	Professional	100,000
22243	Mr. Charles	Florida	Friday, November 07, 1968	M	Married	High School	Professional	100,000
22244	Mr. Charles	Florida	Monday, November 10, 1968	M	Married	High School	Professional	100,000
22245	Mr. Charles	Florida	Thursday, November 13, 1968	M	Married	High School	Professional	100,000
22246	Mr. Charles	Florida	Sunday, November 16, 1968	M	Married	High School	Professional	100,000
22247	Mr. Charles	Florida	Wednesday, November 19, 1968	M	Married	High School	Professional	100,000
22248	Mr. Charles	Florida	Saturday, November 22, 1968	M	Married	High School	Professional	100,000
22249	Mr. Charles	Florida	Tuesday, November 25, 1968	M	Married	High School	Professional	100,000
22250	Mr. Charles	Florida	Friday, November 28, 1968	M	Married	High School	Professional	100,000



Connect, shape and transform raw **data**

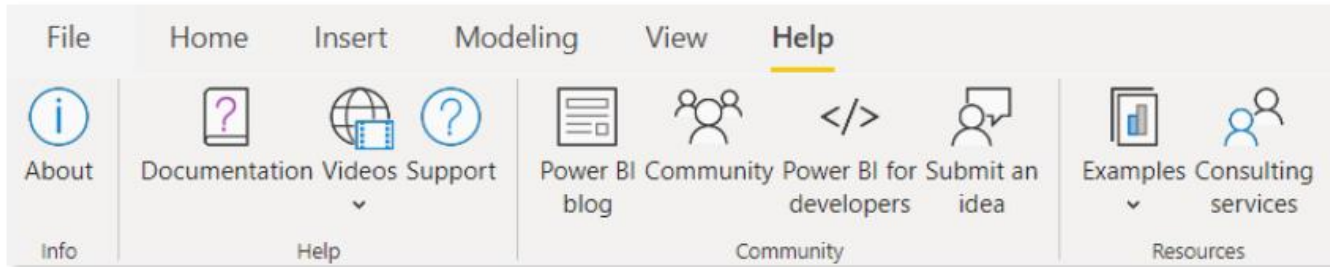


Build table relationships to create a data **model**



Design interactive **reports** to explore and visualize data

HELPFUL RESOURCES



The “**Help**” tab includes documentation, training videos, sample files, templates, and links to support blogs and communities – all within Power BI Desktop



The **Microsoft Power BI blog** (powerbi.microsoft.com/blog) publishes monthly summaries to showcase new features



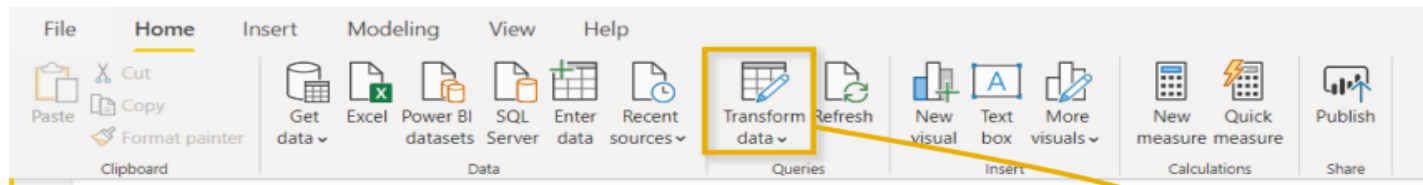
The **Microsoft Power BI YouTube Channel** publishes demos, feature summaries, and advanced tutorials (check out “**Guy in a Cube**” too!)



Power BI User Groups (PUG) are communities of users, which include both local meet-ups and helpful online forums (pbusergroup.com)

REPORT VIEW TABS

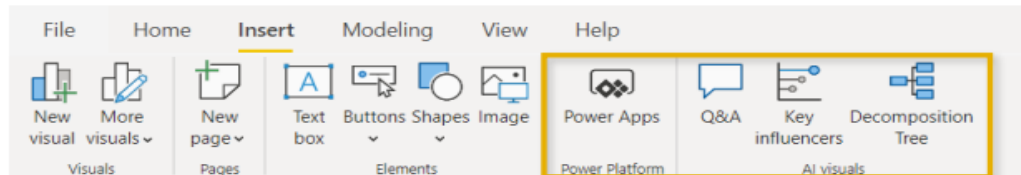
HOME*:



*The original Home tools are now split across **Home** & **Insert***

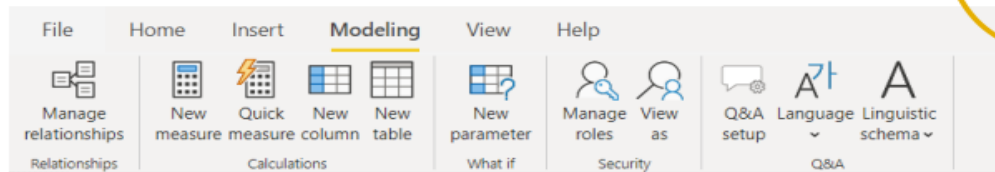
"Edit Queries" is now "Transform Data"

INSERT:

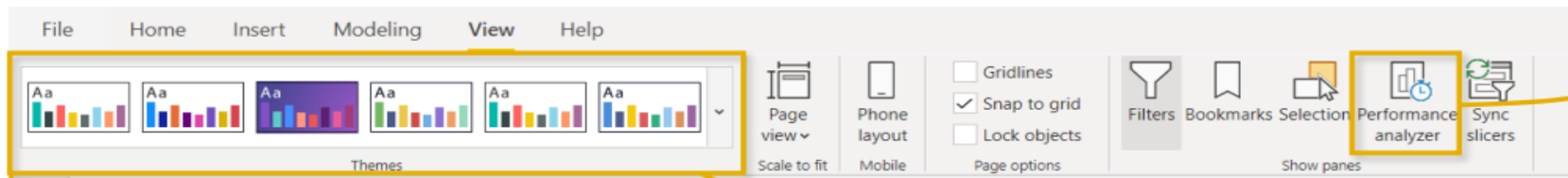


Power Apps and AI Visuals are now featured in the **Insert** menu

MODELING:

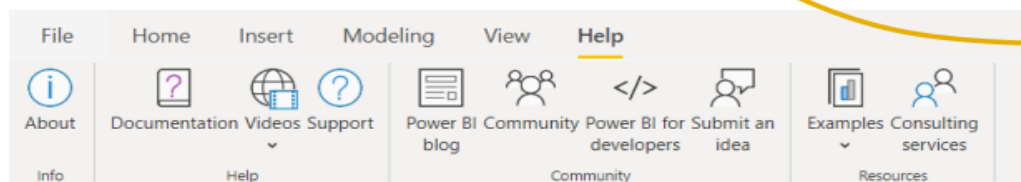


VIEW:



Performance analyzer to tune & optimize reports

HELP*:



New report **Theme** designs & previews

REPORT VIEW TABS

FORMAT:

AdventureWorks_Rep

File Home Insert Modeling View Help **Format** Data / Drill

Interactions: Edit interactions, Apply drill down filters to (Entire page)

Arrange: Bring forward, Send backward, Selection, Align, Group

ADVENTURE WORKS cycles

1/1/2016 6/30/2017

Total Orders by Category

Product Name	Total Orders	Return Rate
Water Bottle - 30 oz.	3,983	1.95%
Patch Kit/8 Patches	2,952	1.61%
Mountain Tire Tube	2,846	1.64%
Road Tire Tube	2,173	1.55%
Sport-100 Helmet, Red	2,099	3.33%
Sport-100 Helmet, Blue	1,995	3.31%
Fender Set - Mountain	1,975	1.36%
Sport-100 Helmet, Black	1,940	2.68%
Mountain Bottle Cage	1,896	2.02%
Road Bottle Cage	1,668	1.68%
Touring Tire Tube	1,364	1.64%
HL Mountain Tire	1,305	3.75%

DATA/DRILL:

AdventureWorks_Rep

File Home Insert Modeling View Help **Format** **Data / Drill**

Show: Visual table, Data point table

Interactions: Apply drill down filters to (Entire page)

Drill actions: Switch to next level, Expand next level, Drill up, Drill down, Drill through

Data groups: Groups

ADVENTURE WORKS cycles

1/1/2016 6/30/2017

Total Orders by Category

Product Name	Total Orders	Return Rate
Water Bottle - 30 oz.	3,983	1.95%
Patch Kit/8 Patches	2,952	1.61%
Mountain Tire Tube	2,846	1.64%
Road Tire Tube	2,173	1.55%
Sport-100 Helmet, Red	2,099	3.33%
Sport-100 Helmet, Blue	1,995	3.31%
Fender Set - Mountain	1,975	1.36%
Sport-100 Helmet, Black	1,940	2.68%
Mountain Bottle Cage	1,896	2.02%
Road Bottle Cage	1,668	1.68%
Touring Tire Tube	1,364	1.64%
HL Mountain Tire	1,305	3.75%

Select a visual in the Report View to access the **Format** and **Data/Drill** menus, where you can access alignment tools, edit interactions, and configure drill down and drill through functionality

NOTE: You can also access contextual **Table Tools**, **Column Tools** and **Measure Tools** menus by selecting items from the Fields pane while in Report View

REPORT VIEW TABS

Fields

Search

- AW_Calendar_Lo...
- AW_Customer_Lo...
- AW_Product_Cate...
- AW_Product_Loo...
- AW_Product_Sub...
- ProductCategory...
- ProductSubcateg...
- SubcategoryName
- AW_Returns
- % of All Returns
- ALL Returns
- Bike Returns
- Prev Month Retur...

Table tools

Name: AW_Customer_Loo...

Mark as date table | Manage relationships | New measure | Quick measure | New column | New table

CustomerKey	Prefix	FirstName	LastName	BirthDate	MaritalStatus	Gender	EmailAddress	AnnualIncome	TotalChildren
11206	Mr.	Blake	Flores	Friday, September 24, 1948	M	M	blake60@adventure-works.com	\$60,000	2
11214	Mr.	Charles	Miller	Monday, November 07, 1949	S	M	charles9@adventure-works.com	\$60,000	2
11227	Mr.	Marshall	Chavez	Sunday, August 12, 1951	S	M	marshall35@adventure-works.com	\$60,000	2

Column tools

Name: BirthDate

Format: Wednesday, March... | Summarization: Don't summarize | Data category: Uncategorized

Sort by column | Data groups | Manage relationships | New column

CustomerKey	Prefix	FirstName	LastName	BirthDate	MaritalStatus	Gender	EmailAddress	AnnualIncome	TotalChildren
11206	Mr.	Blake	Flores	Friday, September 24, 1948	M	M	blake60@adventure-works.com	\$60,000	2
11214	Mr.	Charles	Miller	Monday, November 07, 1949	S	M	charles9@adventure-works.com	\$60,000	2
11227	Mr.	Marshall	Chavez	Sunday, August 12, 1951	S	M	marshall35@adventure-works.com	\$60,000	2

Measure tools

Name: ALL Orders

Home table: AW_Sales | Format: Whole number | Data category: Uncategorized

1 ALL Orders = CALCULATE([Total Orders], ALL(AW_Sales))

OrderDate	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity	QuantityType
7/5/2015	6/3/2002	SO46718	360	12570	9	1	1	Single Item
7/7/2015	4/22/2002	SO46736	360	12341	9	1	1	Single Item
7/12/2015	5/5/2002	SO46776	360	12356	9	1	1	Single Item

TABLE TOOLS:

Access table attributes, manage relationships, add new calculations, etc.

COLUMN TOOLS:

Access column attributes, set data types and formats, use sorting and grouping tools, etc.

MEASURE TOOLS:

Access measure attributes, determine home table, set formats and categories, etc.



THANK YOU

Q&A