



# POWER BI - QUICK INSIGHTS



## Power BI



Market growth will **ACCELERATE** at a CAGR of almost

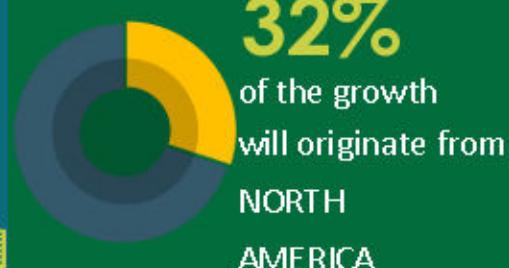


**INCREMENTAL GROWTH**  
\$ 109.71 bn

The year-over-year growth rate for 2020 is estimated at

**7.79%**

The market is **FRAGMENTED** with several players occupying the market share



One of the **KEY DRIVERS** for this market will be **GROWING COMPLEXITY OF DATA**



## READ THE REPORT:

GLOBAL ANALYTICS MARKET  
2020-2024



### Key Players

- Amazon Web Services Inc.
- International Business Machines ...
- Microsoft Corp.
- Mu Sigma Inc.
- Oracle Corp.

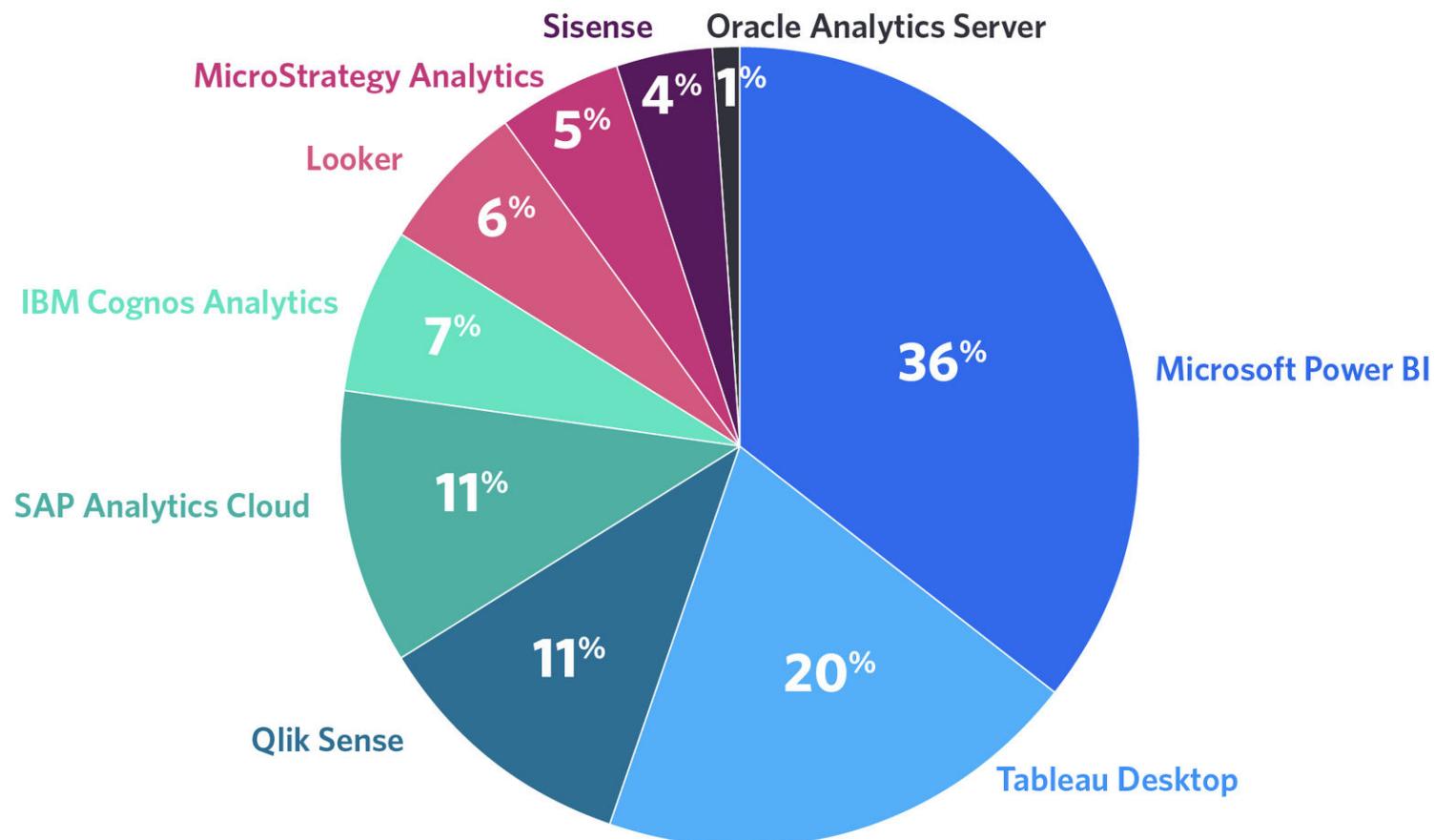


**32%**  
of the growth will originate from **APAC**



Source: <https://www.prnewswire.com/news-releases/data-analytics-market-size-to-grow-by-usd-196-47-billion--32-of-the-market-growth-will-originate-from-apac--17-000-technavio-reports-301521031.html>

# Market Share of Top Business Intelligence Software in 2021



Source: TrustRadius platform data collected in June 2021

©  TrustRadius

Gartner has ranked Microsoft

a **Leader** in the **Gartner 2022** Magic Quadrant for Analytics and Business Intelligence Platforms for the thirteenth year in a row.

## Bring your data to life with Microsoft Power BI

While Excel begins to slow down when dealing with huge models, Power BI is designed to handle tables with more than **100 million** records without breaking a sweat

It's fairly uncommon for your Power BI Workbook (.PBIX file) to be much less than your original data sets – in fact,

**1GB databases** are typically compressed down to roughly 50 – 200MB in size.

**170+** Data Sources Types in Power BI

# What is Power BI?

Power BI is a **business analytics service** provided by **Microsoft** that lets you **visualize** your **data** and share **insights**

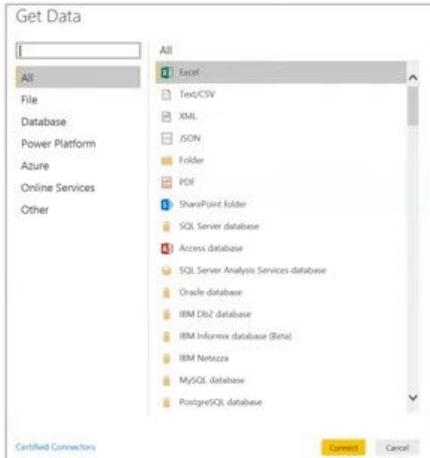


Data

Visualization

# Why Power BI?

1

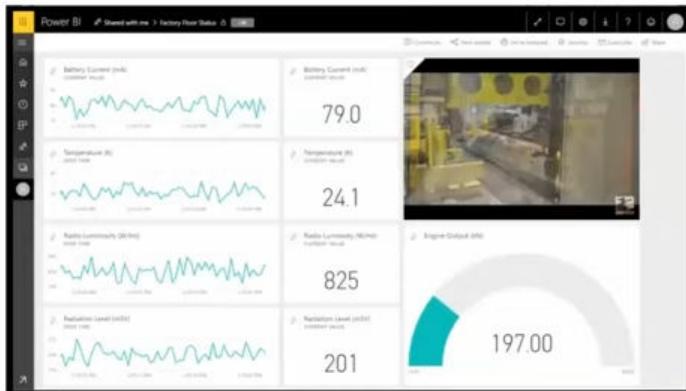


Access vast volumes of  
data from multiple sources

Power BI allows you to view, analyze, and visualize huge quantities of data that cannot be opened in Excel. Power BI uses powerful compression algorithms to import and cache the data within the .PBIX file

# Why Power BI?

6



Real-time stream analytics

Power BI fetches data from factory sensors and social media sources to get access to real-time analytics so you are always ready to make timely business decisions

# 5

## Why Power BI?

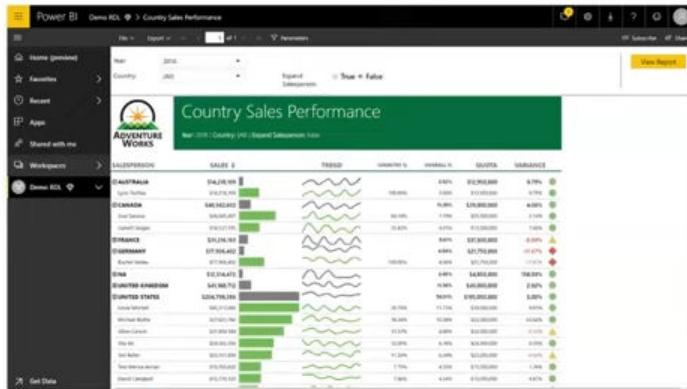


Turn insights into action

Power BI allows you to get insights from data and turn insights into actions to take data-driven business decisions

## 2

# Why Power BI?



Interactive UI/UX features

Power BI makes things visually appealing. It has easy drag and drop functionality, with features that allow you to copy all formatting across similar visualizations

## Why Power BI?



Accelerate big data  
preparation with Azure

Using Power BI with Azure allows you to analyze and share large volumes of data. With Azure data lake, you can reduce the time it takes to get insights and increase collaboration between business analysts, data engineers, and data scientists

# Features of Power BI



Power BI Desktop



Stream analytics



Multiple data sources



Custom Visualization

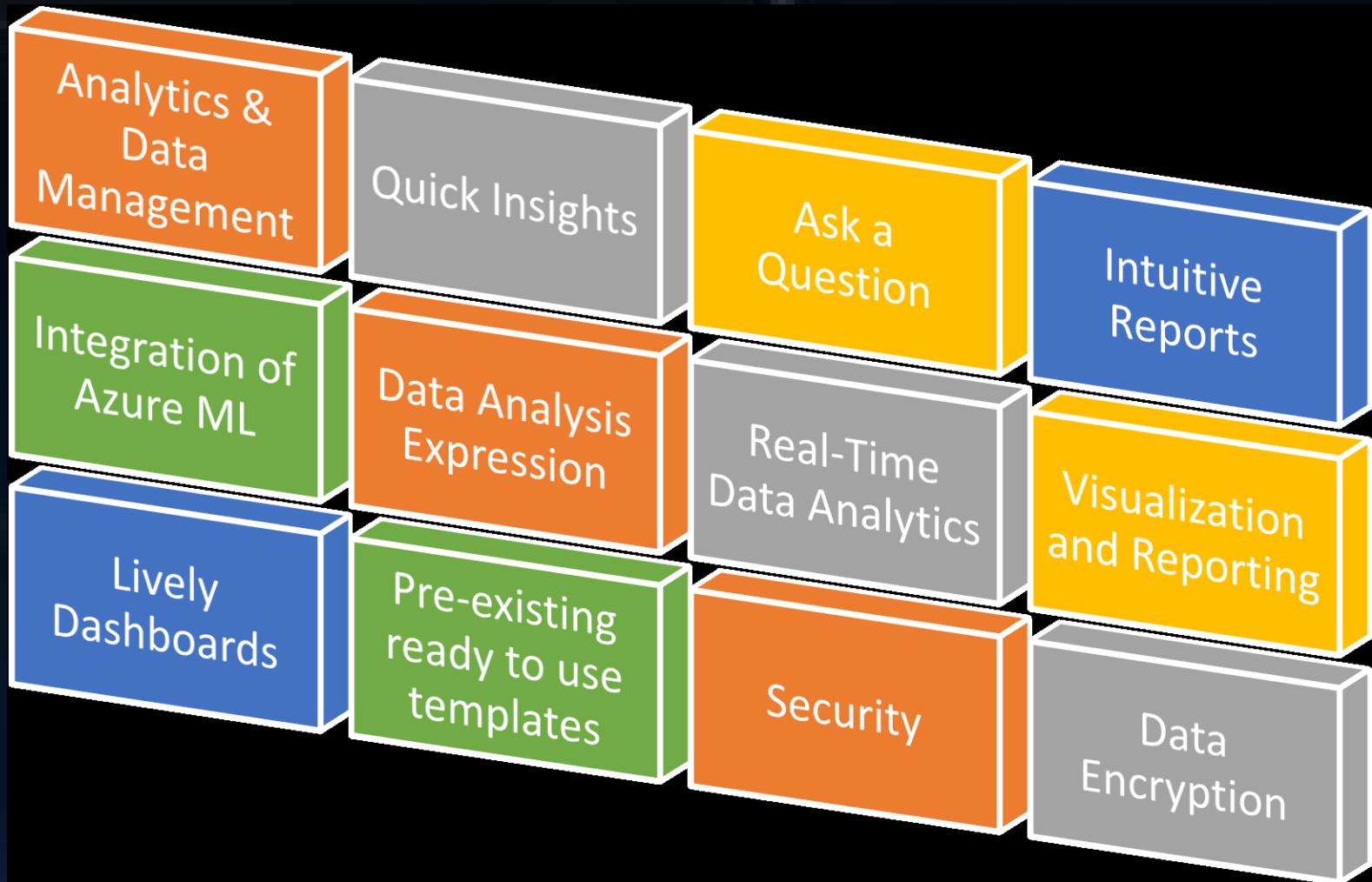
Power BI Desktop allows you to build reports by accessing data easily. You do not need advanced report designing, or query skills to build a report

From factory sensors to social media sources, Power BI supports real-time analytics to make timely decisions

Power BI supports various sources of data such as Excel, CSV, SQL Server, Web files, etc. to create interactive visualizations

Power BI's default standard might not be enough in some cases due to complex data. But you can access the custom library of visualization that meets your needs

# Power BI – Salient Features



# Top Companies Using Power BI

Finance & Banking

Retail & E-Commerce

Manufacturing & Supply chain

Healthcare

Consulting & Professional Services

Education

ADOBE

SIEMENS

COCACOLA

SHELL

AIRBUS

UNILEVER

AIRBUS

PEPSICO

H&M

DELL

ACCENTURE

Rolls-Royce

gartner.com/reviews/market/analytics-business-intelligence-platforms

# Gartner Magic Quadrant for Analytics and BI Platforms

Email Page

Overview Products Gartner Research

Filter By: Company Size Industry Region

IT Services Healthcare and Biotech Manufacturing Miscellaneous Retail Banking ...

Products 1 - 20 | View by Vendor

Review weighting  Reviewed in Last 12 Months Number of Ratings, High to Low

**Microsoft Power BI**  
by Microsoft

Customers' Choice 2022  
4.4 ★★★★☆ 289 Ratings

Star Rating	Percentage
5 Star	46%
4 Star	49%
3 Star	5%
2 Star	0%
1 Star	0%

"Power BI: elevate reporting with data analysis."

Based on my experience, Power BI is a data analysis tool designed for enterprises, which enables users to create interactive reports and dashboards that allow them to visualize data from various sources. ...

[Read Reviews](#)

**Tableau**  
by Salesforce (Tableau)

Customers' Choice 2022  
4.4 ★★★★☆ 236 Ratings

Star Rating	Percentage
5 Star	44%
4 Star	51%
3 Star	5%
2 Star	0%
1 Star	0%

"Data analysis without complications"

Tableau has been the main solution that we have been using to make data-driven decisions and to help us understand a variety of factors that occur in our business as a result of many campaigns, ...

[Read Reviews](#)

**Microstrategic**

Competitors and Alternatives

Microsoft vs Salesforce (Tableau)  
Microsoft vs Google  
Microsoft vs SAP  
[See All Alternatives](#)

Competitors and Alternatives

Salesforce (Tableau) vs Microsoft  
Salesforce (Tableau) vs Google  
Salesforce (Tableau) vs Qlik  
[See All Alternatives](#)

Source: <https://www.gartner.com/reviews/market/analytics-business-intelligence-platforms>

# 2023 Gartner Magic Quadrant for Analytics and Business Intelligence Platforms

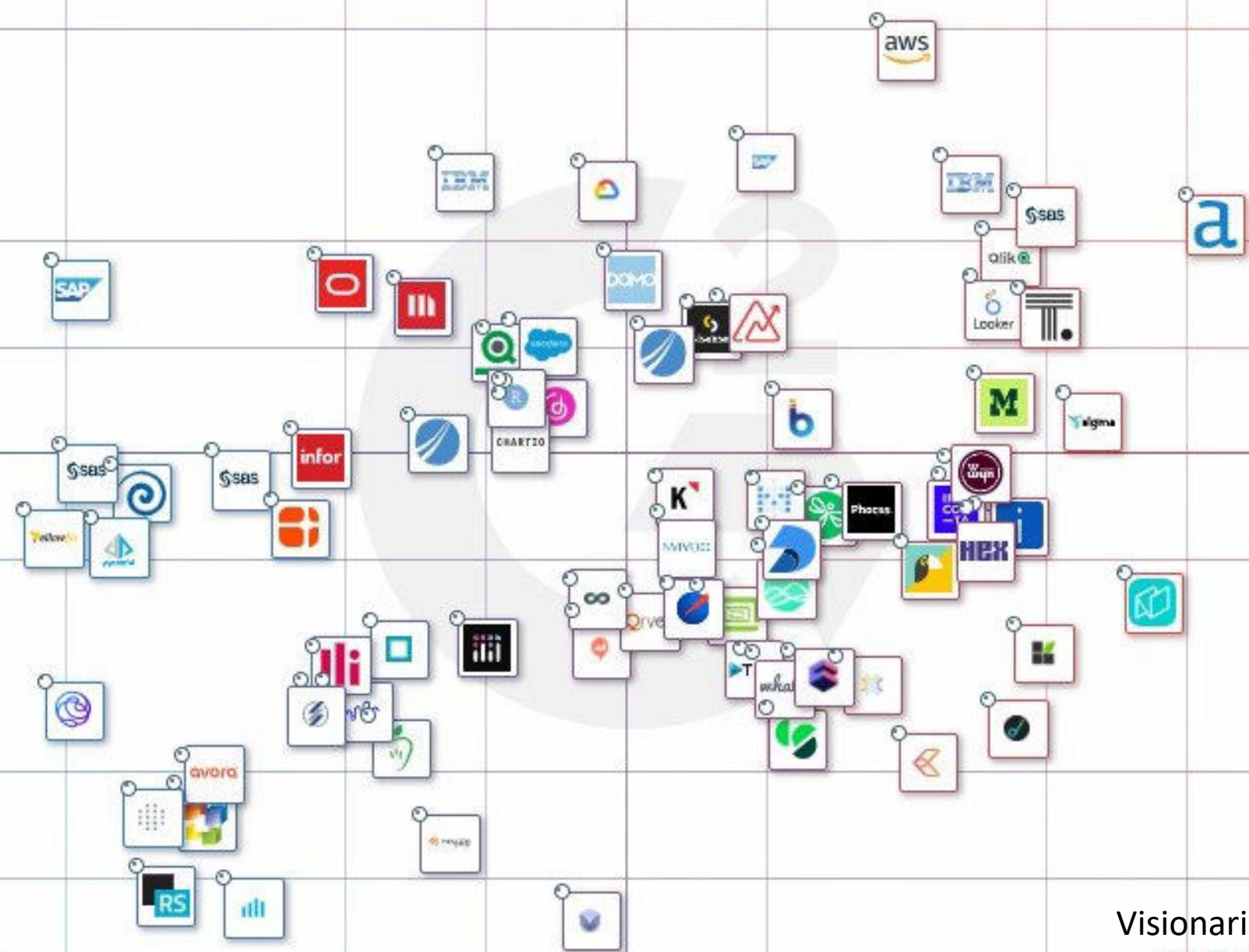
<https://powerbi.microsoft.com/en-in/blog/microsoft-named-a-leader-in-the-2023-gartner-magic-quadrant-for-analytics-and-bi-platforms/>



Source: Gartner

Contenders  
Challengers

Leaders



Niche

Visionaries

High Performers

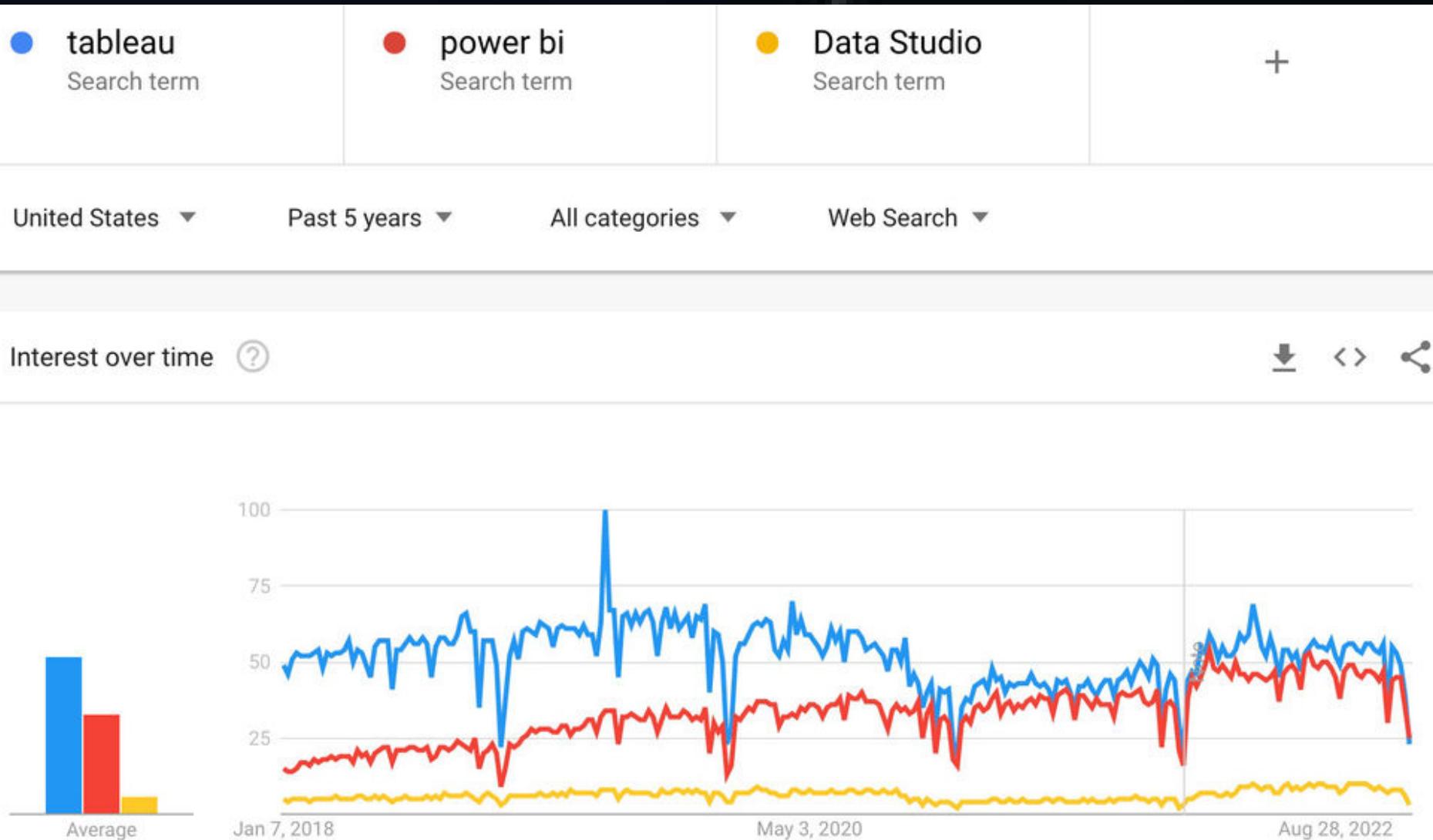
## The Best Data Analytics Software of 2023

- **Microsoft Power BI:** Best for data visualization
- **Tableau:** Best for business intelligence (BI)
- **Qlik Sense:** Best for machine learning (ML)
- **Looker:** Best for data exploration
- **Klipfolio:** Best for instant metrics
- **Zoho Analytics:** Best for robust insights
- **Domo:** Best for streamlining workflows

Source:

<https://www.forbes.com/advisor/business/software/best-data-analytics-tools/>

# POWERBI POPULARITY – GOOGLE TRENDS



# Limitations of Power BI

## Data Volume Limitation

- Max File Size = 1 GB
- Max Dataset for Power BI pro = 10 GB

## Real-time Data Updates

- Designed for periodic or scheduled data refreshes
- Support real-time but performance issues

## Data Transformation Complexity

- Complex ETL may need writing scripts (DAX language)

## Limited Customization Options

- Most capabilities online or cloud based
- Limited capabilities offline

## Licensing Cost

- Full capabilities are high cost.

## Components of Power BI?



Power BI

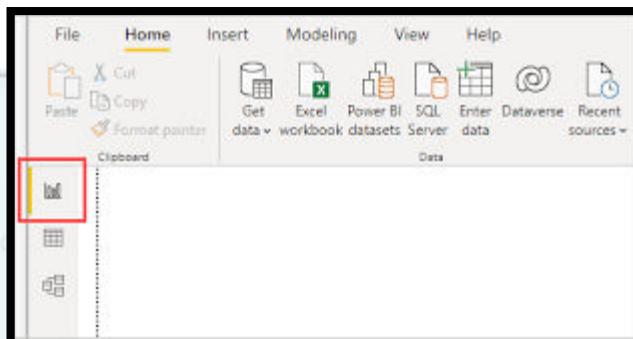
# Components of Power BI

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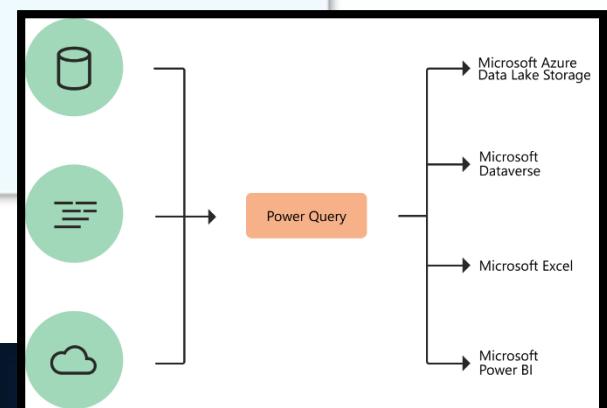


# Components of Power BI

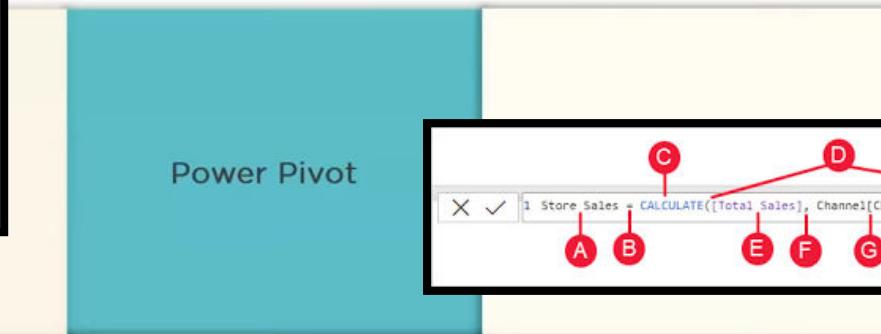
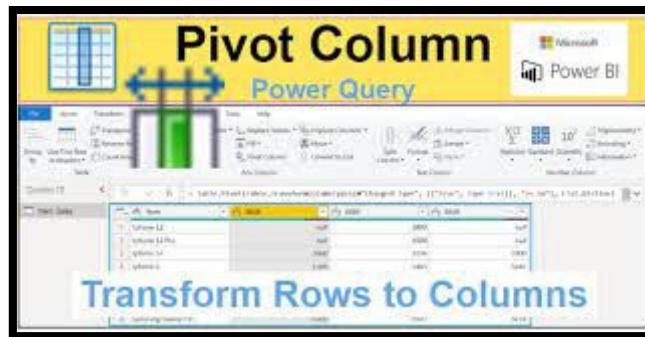
Power Query



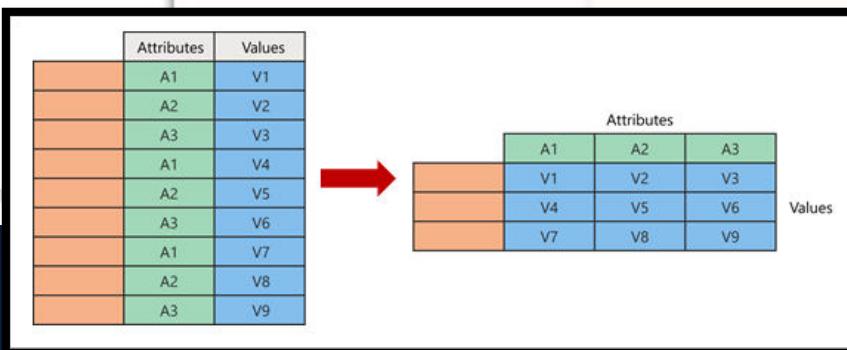
Power Query is the data transformation and mash up engine. It can be downloaded as an add-in for Excel or be used as part of Power BI Desktop



# Components of Power BI



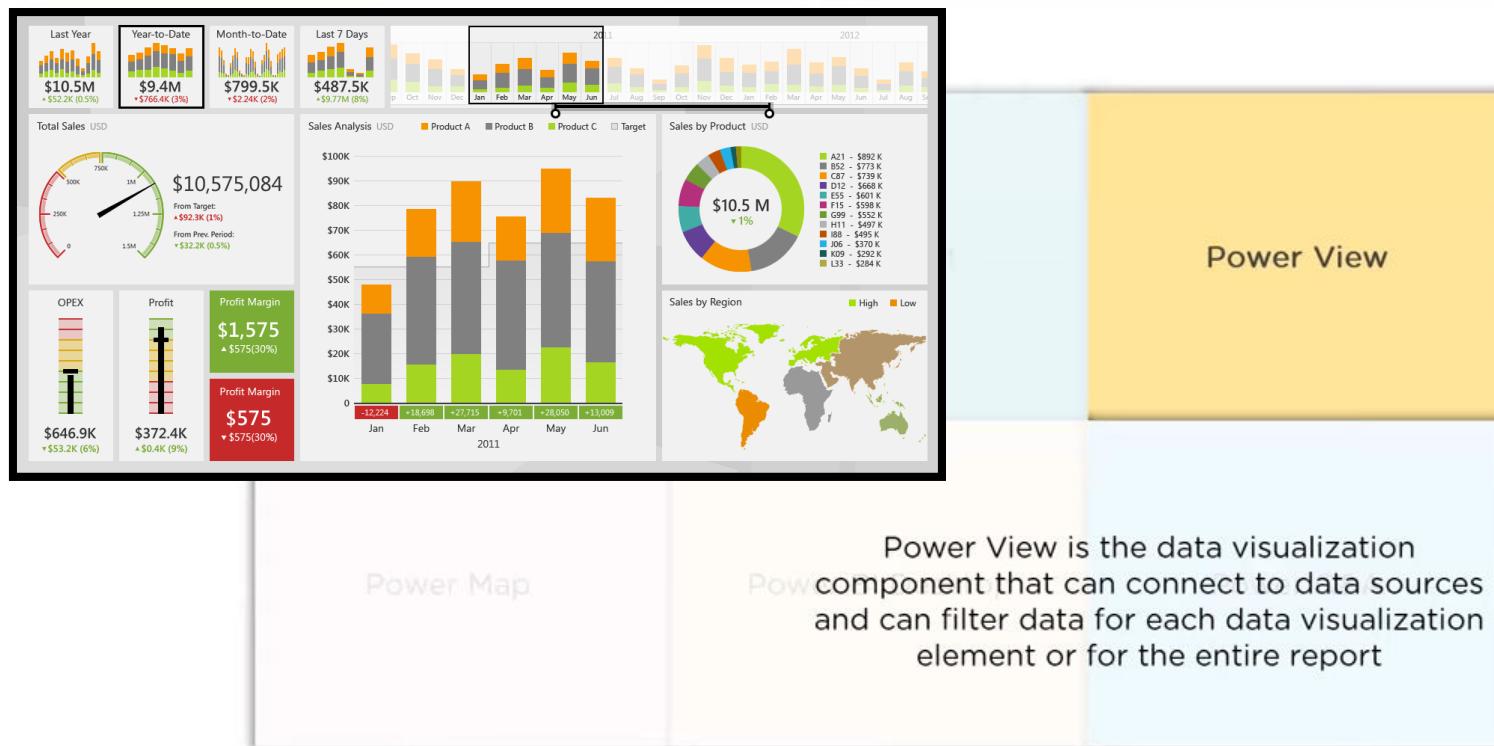
Power Pivot is a data modeling and calculation engine. It uses Data Analysis Expression (DAX) language to model simple and complex data



A screenshot of a Power BI report. On the left is a pivot table with columns "Salesperson" (with dropdowns for 2013, 2014, 2015, Grand Total), "Year" (with dropdowns for 2013, 2014, 2015), and "Value". The data includes entries like Bromley 2013, Callahan 2014, etc. On the right is a chart with a blue arrow pointing up labeled "From this" and a green arrow pointing right labeled "To this", indicating the relationship between the data source and the visualization.

Salesperson	2013	2014	2015	Grand Total
Bromley	32,310.84	44,050.64	10,995.71	87,357.19
Callahan	49,400.07	43,263.95	18,059.50	110,723.52
Coghill	124,655.56	51,163.01	49,945.11	225,753.68
Farnham	103,719.07	79,253.24		
Finchley	95,850.36	55,787.97	Bromley	2013 32310.84
Fuller	71,168.14	73,524.18	Bromley	2014 44050.64
Gillingham	40,826.37	17,181.58	Bromley	2015 10995.71
Gloucester	31,433.16	19,691.85	Callahan	2013 49400.07
Rayleigh	59,827.19	41,903.64	Callahan	2014 43263.95
			Callahan	2015 18059.5
			Coghill	2013 124655.56
			Coghill	2014 51163.01
			Coghill	2015 49945.11
			Farnham	2013 103719.07
			Farnham	2014 79253.24
			Farnham	2015 18223.96
			Finchley	2013 59580.36
			Finchley	2014 55787.97

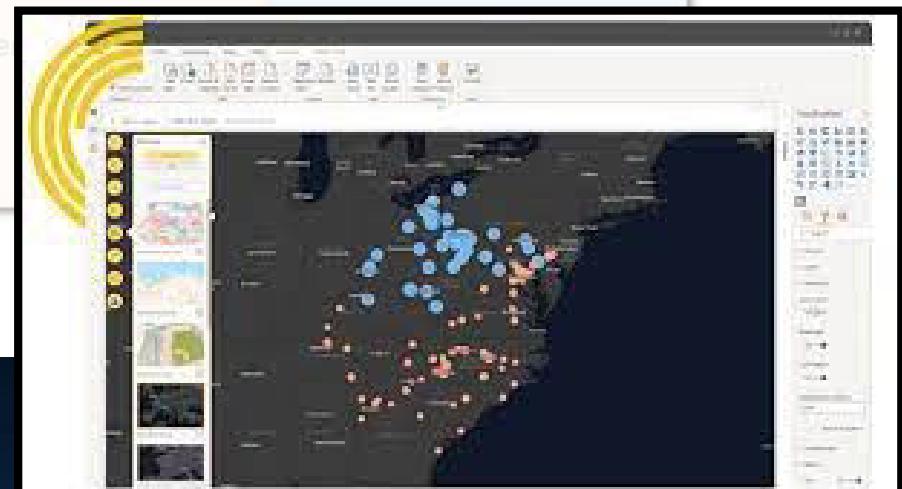
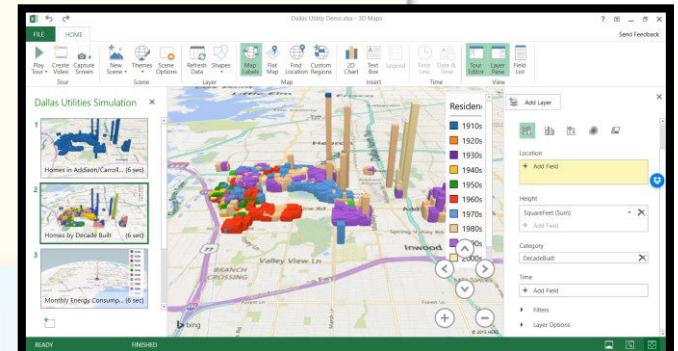
# Components of Power BI



# Components of Power BI

Power Map is used to visualize geospatial data in 3D mode. Power Map works with Bing maps to get best visualization based on latitude, longitude or country, state, city, and street address information

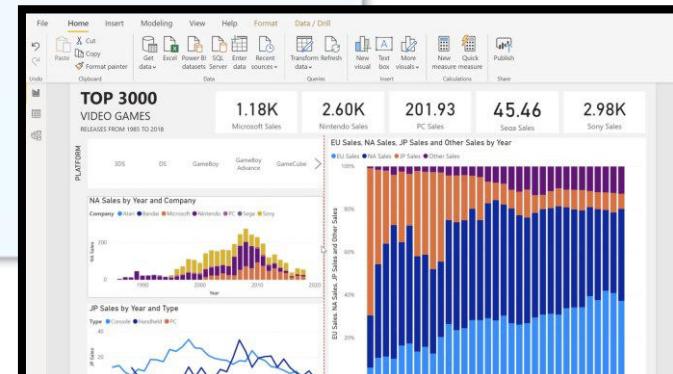
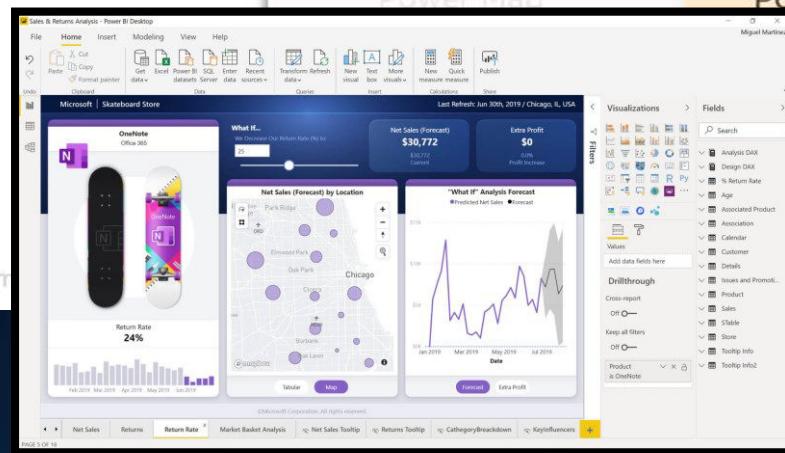
Power Map



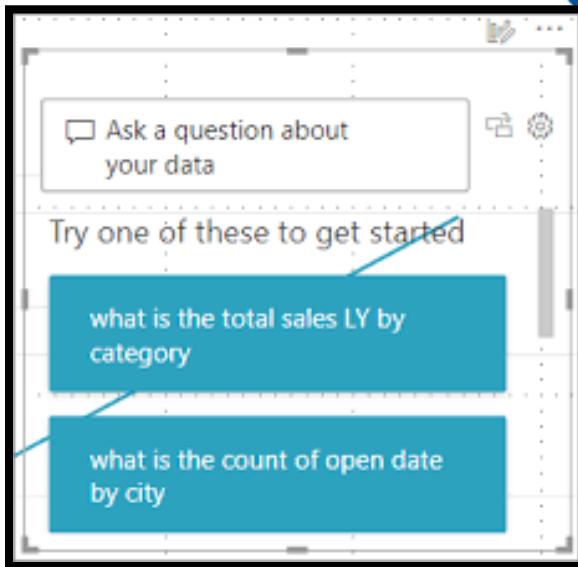
# Components of Power BI

Power BI Desktop is a development tool for Power Query, Power Pivot and Power View.

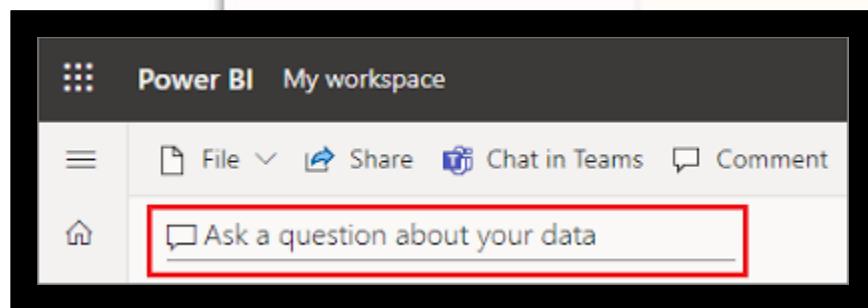
With Power BI Desktop, you have everything under a same solution, and it is easier to develop BI and data analysis experience



# Components of Power BI



Power Q&A is a natural language engine for questions and answers to your data model. Once you've built your data model and deployed that into Power BI website, then you can ask questions and get answers easily



Power Q&A

Power Query

Power Pivot

Power View

Power Map

Power BI  
Desktop

Power BI  
Website

Power Service  
(SaaS)

Power Q&A

Power BI  
Mobile Apps

Data Catalog

Data  
Management  
Gateway

## Power BI Service



Power BI

Power BI x + - □ ×

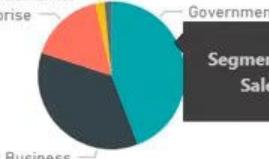
app.powerbi.com/home

Power BI Home ? A

Good evening, Avijeet

First Finance Dashboards ⓘ

Sales BY SEGMENT

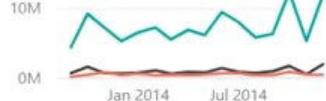


Segment: Government  
Sales: 52,504,260.67 (44.22%)

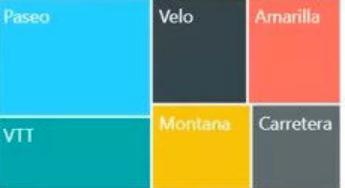
Sales BY MONTH



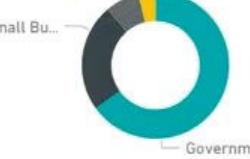
Sales, Profit, Discounts BY DATE



Sales BY PRODUCT



Profit BY SEGMENT



Favorites + frequent

Get data

Search

18:31 03-02-2020

First Finance Dashboards - Power BI

app.powerbi.com/groups/me/dashboards/27a17f01-adc9-4920-92c4-3408f4c1e9f8

Power BI My workspace > First Finance Dashboards

New look off

Ask a question about your data

Sales BY COUNTRY

Sales BY SEGMENT

Sales BY MONTH

Sales, Profit, Discounts BY DATE

Units Sold

Profit BY SEGMENT

Sales BY PRODUCT

Add tile Comments View related Set as featured Unfavorite Subscribe Share Web view

Home Favorites Recent Apps Shared with me Workspaces My workspace Dashboards First Finance Dashboards Reports Finance Dashboard Workbooks Get data Search

18:31 03-02-2020

**Sales**

**Units Sold**

**118,726,350.**

**1,125,806.**

**Sales**

**Sales**

**Segment**

**19... (19%)** **(44%)** **42... (3%)**

**Gover...** **Small ...** **Enter...**

**Sales**

**Sales**

**Janu...** **Febr...** **March** **April** **May** **June** **July** **Aug...** **Sept...** **Oct...** **Nov...** **Dec...**

**20M** **0M**

**Profit**

**Segment**

**1.32M (7.52%)**

**Government**

**Paseo** **VTT** **Velo**

**Amarilla** **Carretera**

**Montana**

**Bing** ©2019 HERE, ©2020 Microsoft Corporation

## Power BI Dashboard



Power BI

# Power BI Dashboard

Power BI Dashboard is a **single page visualization** to tell a story

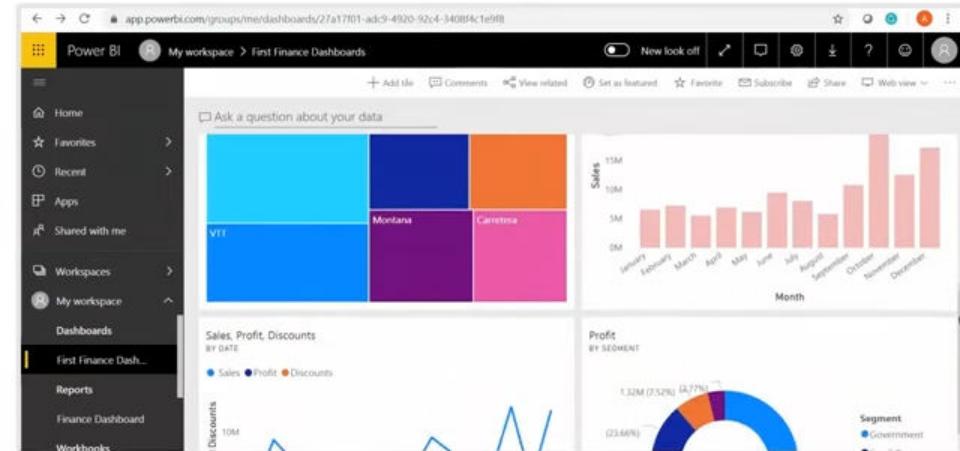
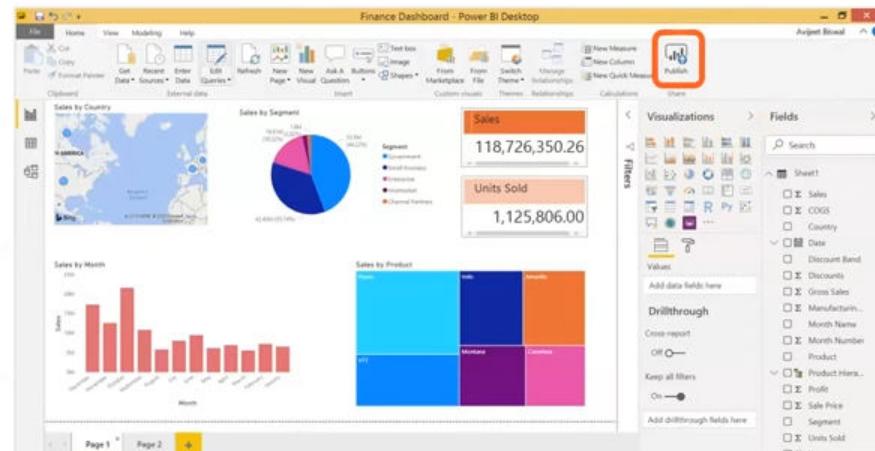
The screenshot shows a Power BI dashboard titled "First Finance Dash...". The left sidebar lists navigation options: Home, Favorites, Recent, Apps, Shared with me, Workspaces, My workspace, Dashboards, Reports, Finance Dashboard, Workbooks, and Get data. The main area displays several tiles:

- Sales BY COUNTRY:** A map of North America and Europe.
- Sales:** A large orange box showing "Sales 118,726,350."
- Sales BY SEGMENT:** A pie chart with segments: Segment (18.1%), Government (14.1%), Small Business (40.1%), and Inter. (31.7%).
- Sales BY PRODUCT:** A bar chart showing sales for VIT, Velo, and Vans.
- Units Sold:** A large orange box showing "Units Sold 1,125,806."
- Sales BY MONTH:** A horizontal bar chart showing monthly sales from Jan to Dec.
- Sales, Profit, Discounts BY DATE:** A line chart showing Sales, Profit, and Discounts over time.
- Profit BY SEGMENT:** A donut chart showing profit distribution across segments.

The visualizations you see on the dashboard are called **tiles** and are pinned to the dashboard by report designers

# Create and publish reports in Power BI Dashboards

Power BI allows you to create different reports on Power BI Desktop. These reports can be published on to Power BI dashboard using Power BI service

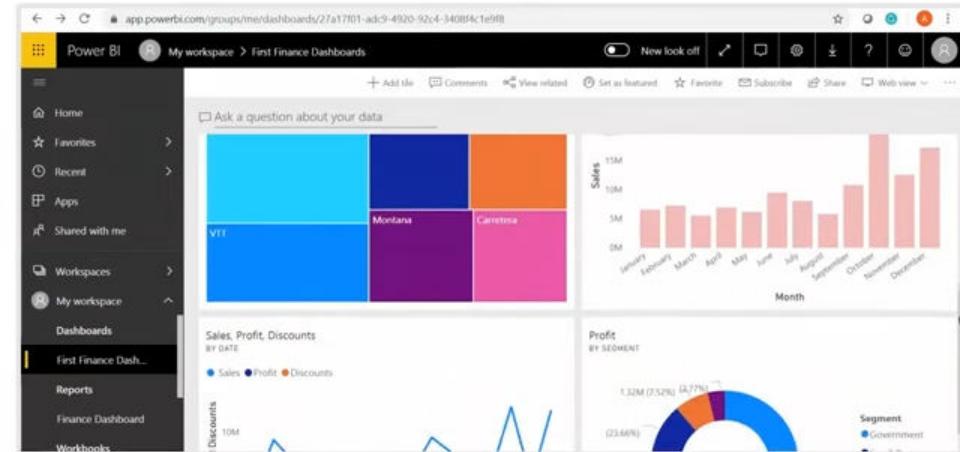
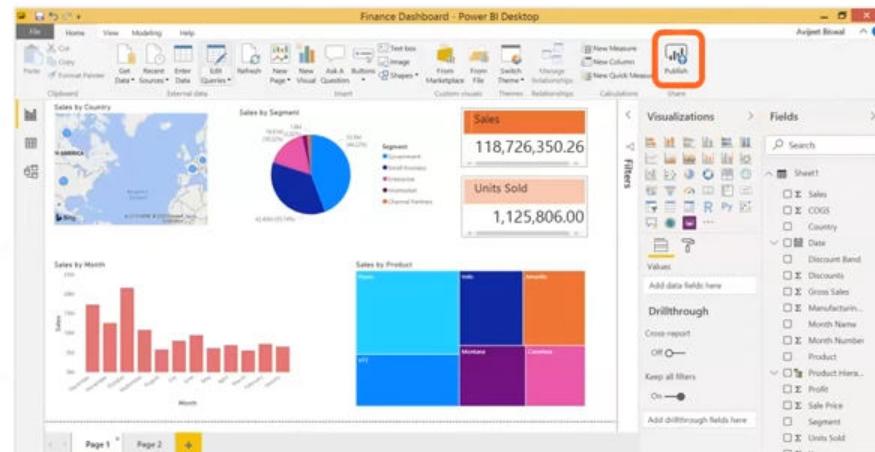


Power BI report created on Power BI Desktop.  
Click on **Publish**. This will take you to Power BI service where you can build a dashboard

Single page Power BI dashboard on Power BI service

# Create and publish reports in Power BI Dashboards

Power BI allows you to create different reports on Power BI Desktop. These reports can be published on to Power BI dashboard using Power BI service



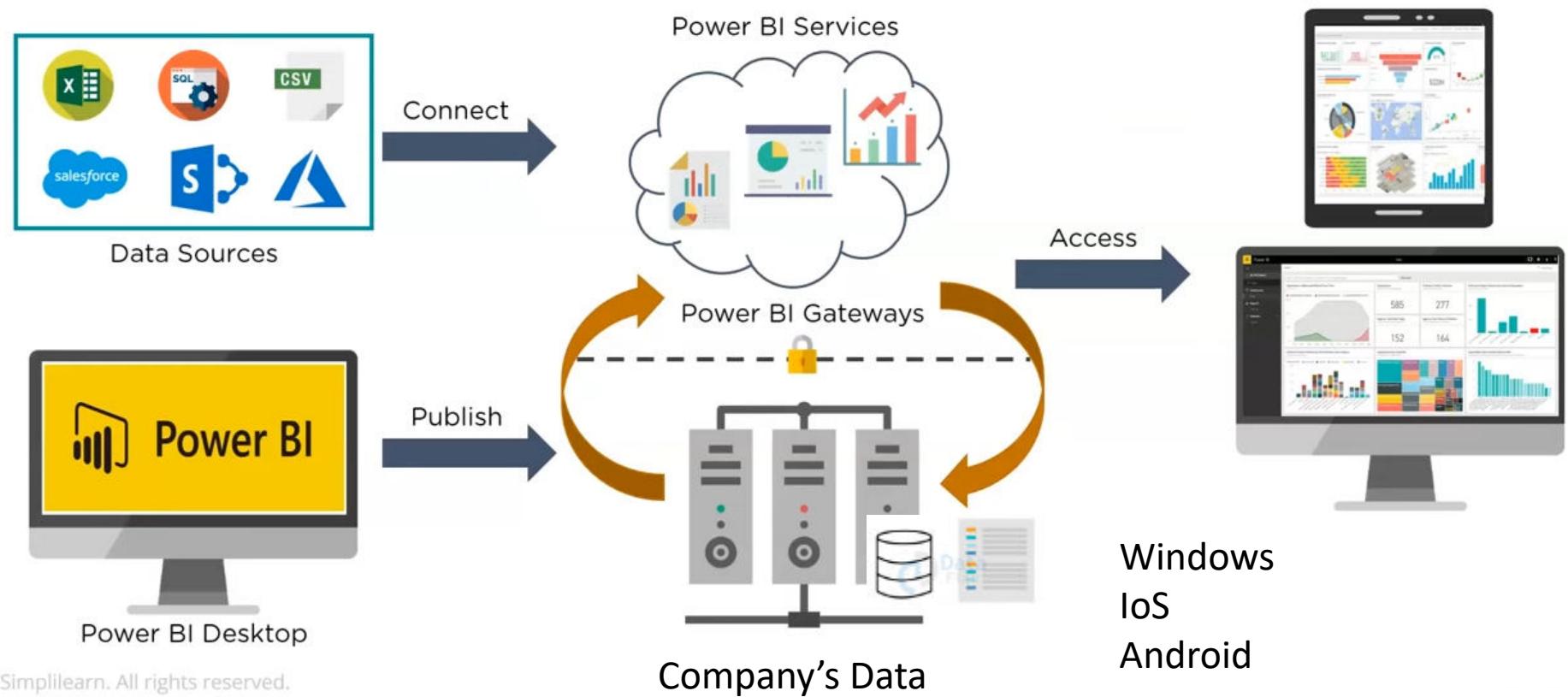
Power BI report created on Power BI Desktop.  
Click on **Publish**. This will take you to Power BI service where you can build a dashboard

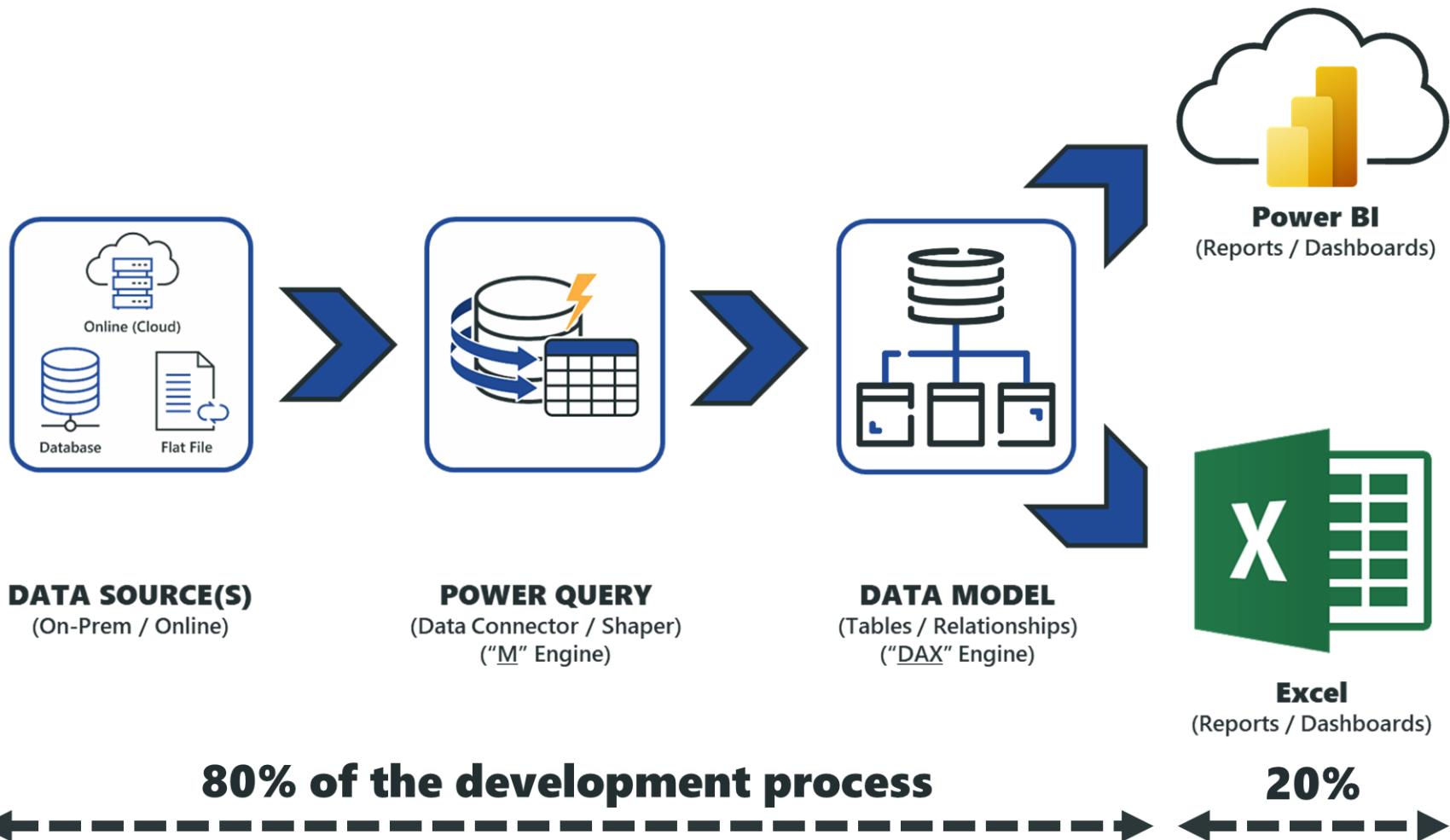
Single page Power BI dashboard on Power BI service

## Power BI Architecture



# Power BI Architecture





## REPORTS & DASHBOARDS

Sales CP chart			YoY
Rinacet	202	▼ -30%	
Norfloxacin	115	▲ +128%	
Azithromycin	81	▲ +39%	
Dermidex	46	▼ -6%	
Acepar	39	▲ +37%	



POWER BI

## DATA MODELING

Create table relationships and use DAX for reporting measures

POWER  
PIVOT

## ETL

Clean, re-shape and combine data sets

POWER  
QUERY

## DATA SOURCES



Multiple Excel / Text files in a folder



Excel Tables



OData Feed



ODBC



JSON



CSV files

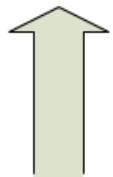


SQL, Access, Analysis Services

Source: [datacycleanalytics.com](http://datacycleanalytics.com)



Power BI



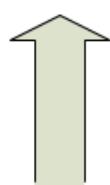
Live Connection



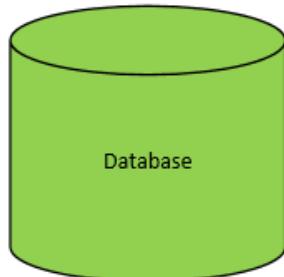
SSAS Tabular



Power BI



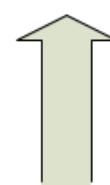
Direct Query



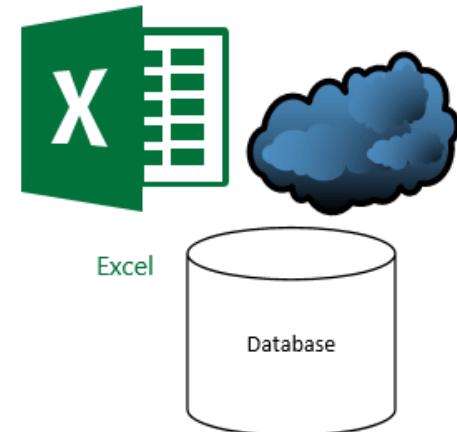
Database



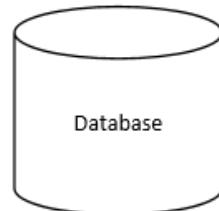
Power BI



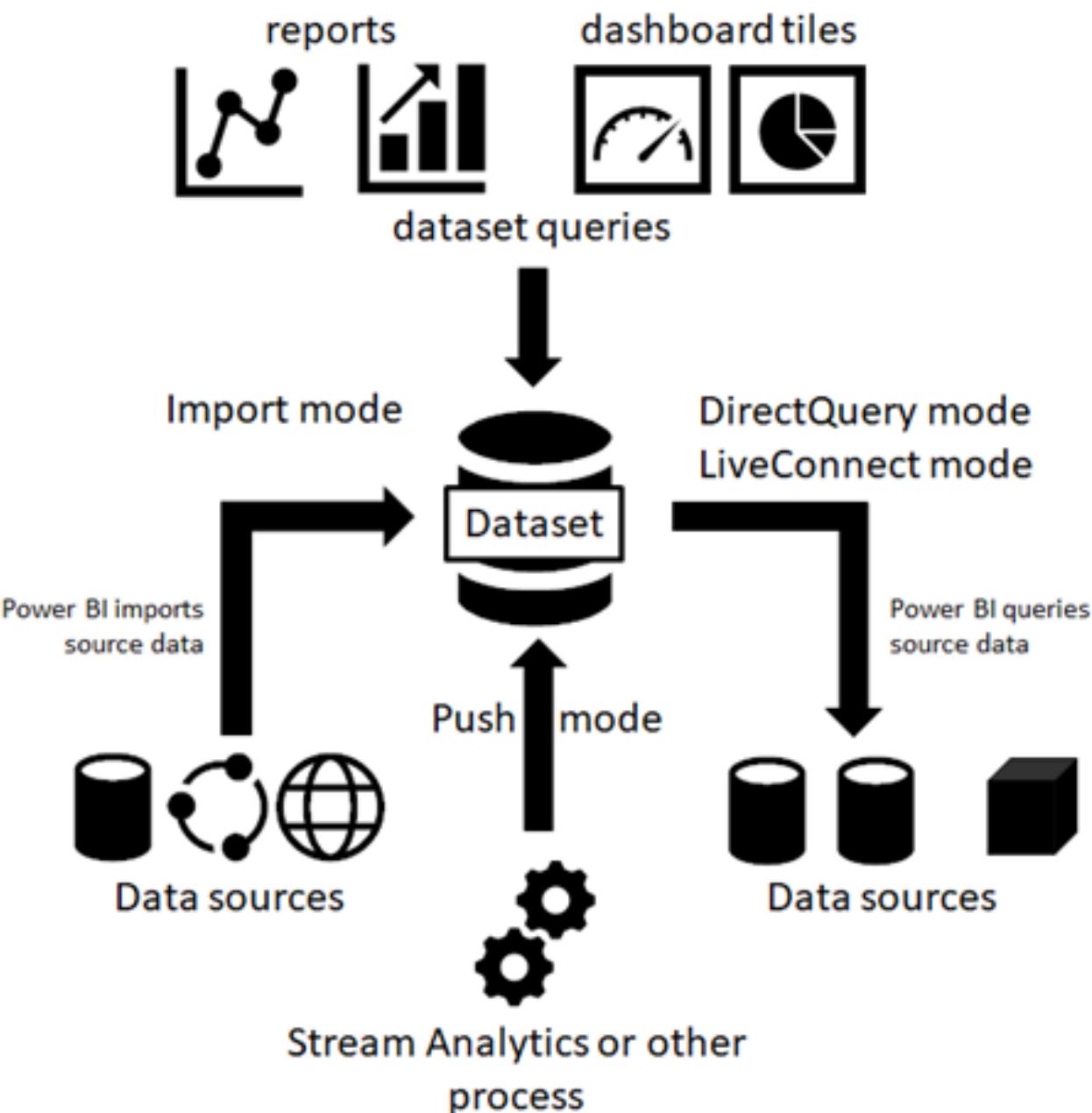
Import Data

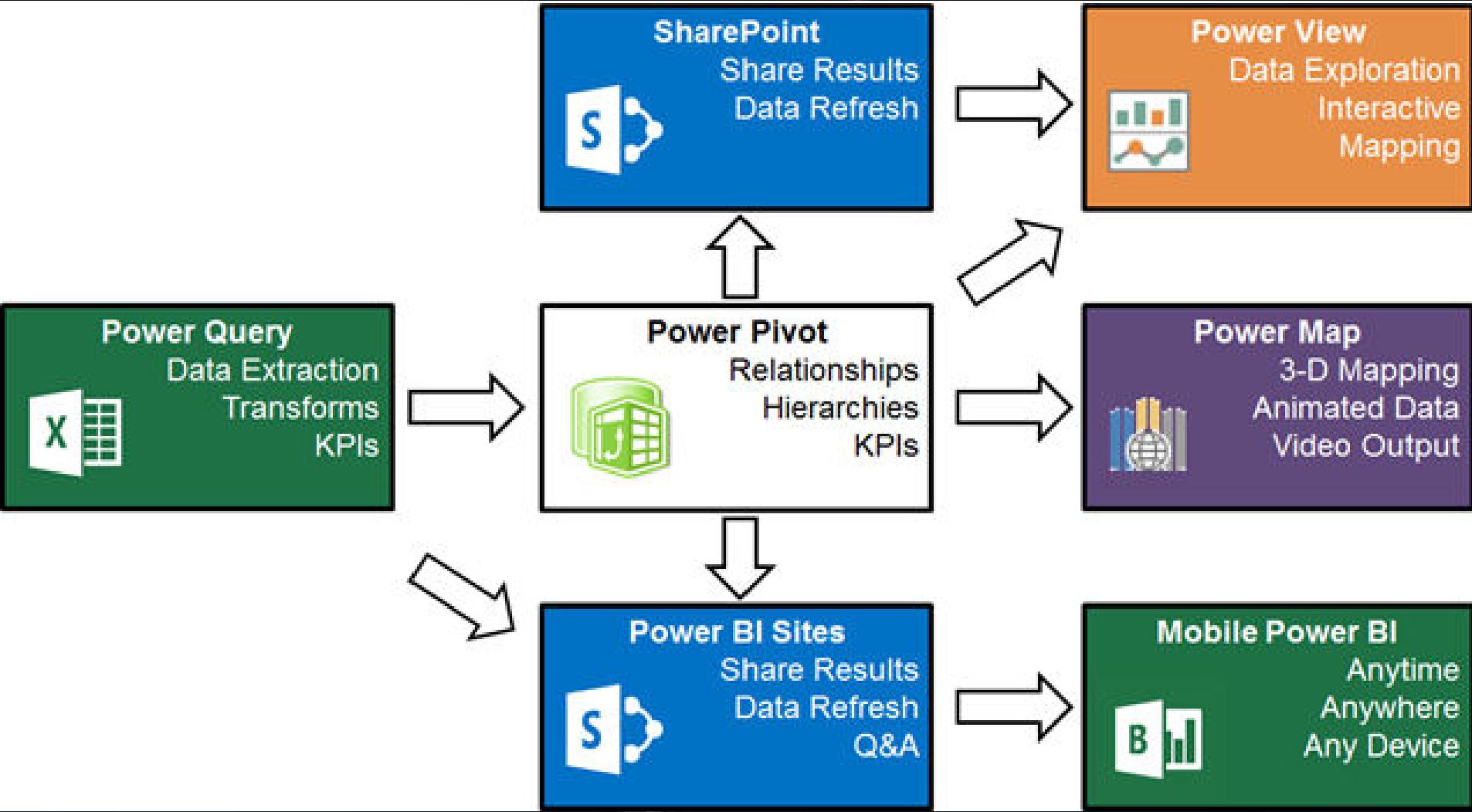


Excel

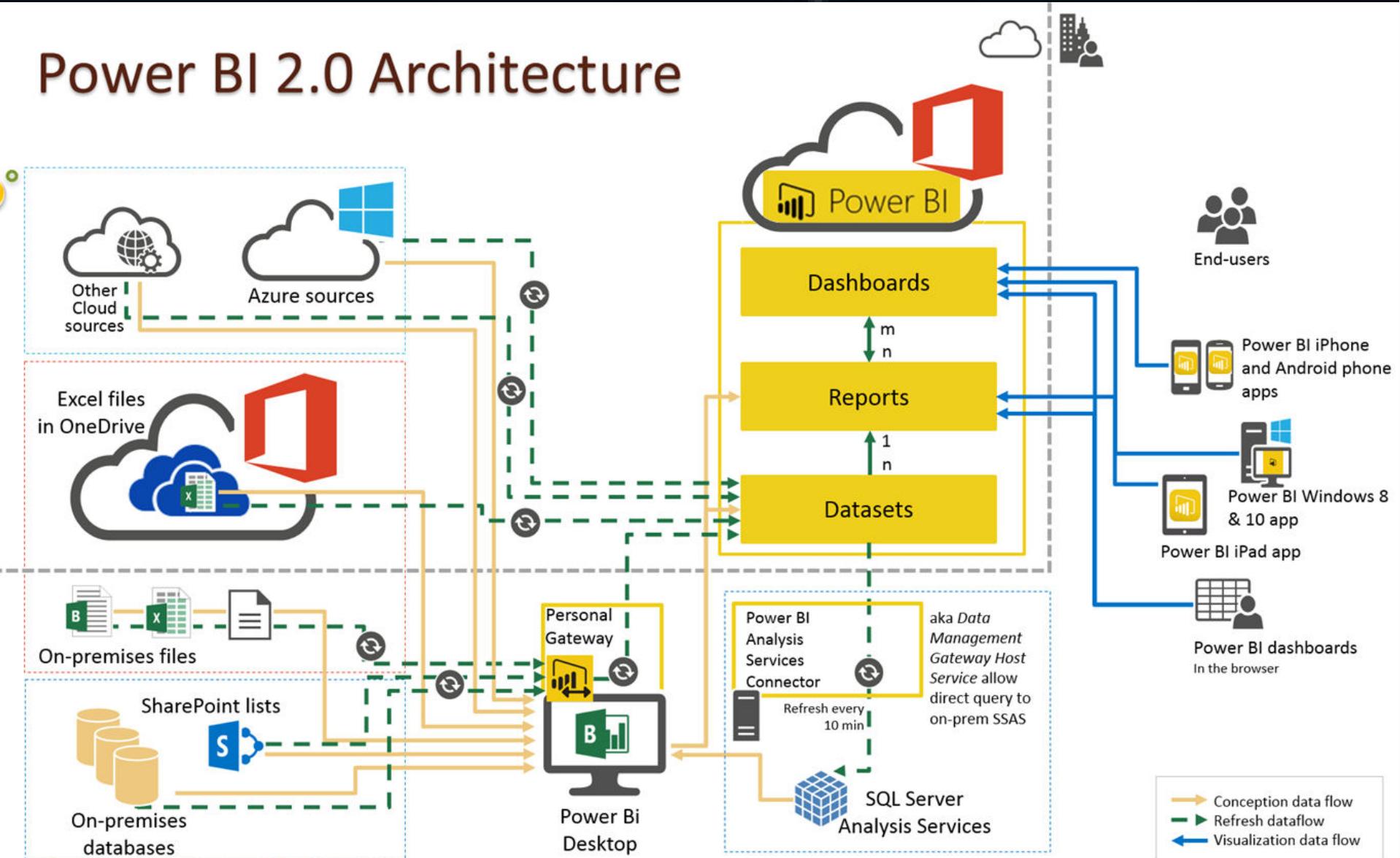


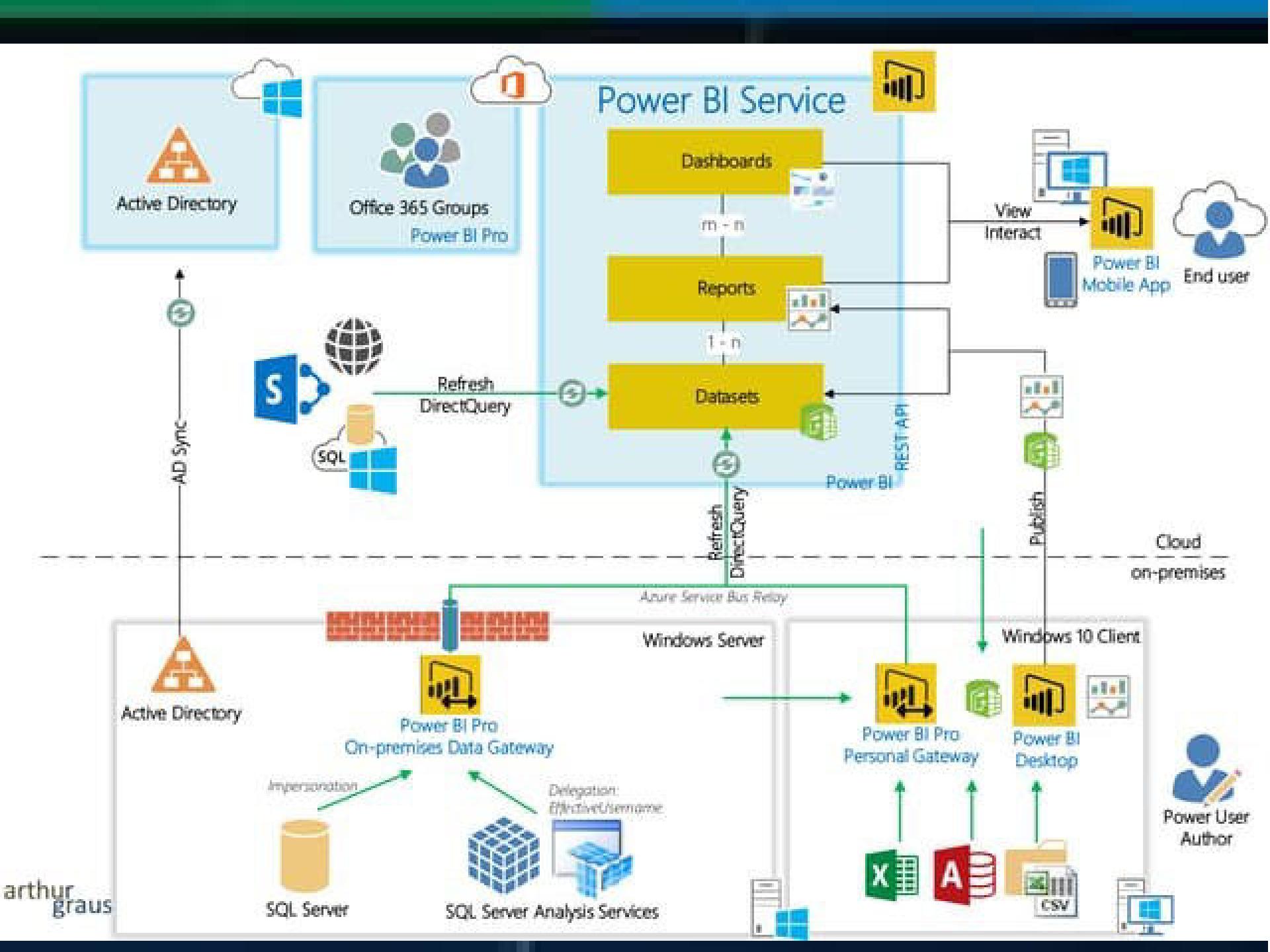
Database





# Power BI 2.0 Architecture





## Power BI Desktop



## Power BI service



## Power BI Mobile





Power BI

## Power BI Case Study

## Power BI Case Study

The Meijer logo, featuring the word "meijer" in a bold, red, sans-serif font, set against a white rounded rectangle.

It had become dependent on its IT organization to extract insights from its data



It was time consuming to wait for IT to build every report



They were unable to do ad hoc analysis easily

## Power BI Case Study

The Meijer logo, featuring the word "meijer" in a bold, lowercase, sans-serif font. The letters are primarily red, with the "m" being blue. The logo is set against a white background which is itself centered on a blurred image of a supermarket aisle.

Meijer connected **Power BI** to an on-premises SQL Server Analysis Services cube



It allowed them to refresh **20 billion** rows of data in **near-real time**



With Power BI, teams can pull in the **data faster** and perform **real-time analysis** to derive insights from data

## Power BI Case Study



A bakery department used Power BI to compare its sales with regional performance



They analyzed where Meijer was behind the regional trends, focus on the problem and create a solution



With Power BI, they can drill down into hourly sales and send out a sales flash to 800 Meijer business leaders

## Power BI Case Study

A photograph of the interior of a Meijer grocery store. The store features a modern design with white walls and ceiling, and shelves filled with various products. In the foreground, there are refrigerated sections and shelves with items like bread and produce. A large, semi-transparent white box is overlaid on the upper half of the image, containing the company logo.

**meijer**

Power BI enabled them to standardize data sources and empower store directors and team leaders, to develop and track their data to ensure that they can improve



Power BI

# POWER BI VS TABLEU



# Performance



Power BI is **faster** and **performs better** when the volume of data is **limited**. Power BI tends to **drag slow** while handling **bulk data**



Tableau can handle **large volumes of data** easily. It is **faster** and provides extensive features for visualizing the data



## Cost



Power BI professional version costs less than \$10 per month per user. The yearly subscription comes around \$100



The pro version of Tableau comes at more than \$35 per month per user. The yearly subscription costs around \$1000



# Data Sources



Power BI supports various data sources but has **limited access to other databases and servers** compared to Tableau. Example: SQL Server, Access DB, Oracle Database, IBM DB2, MySQL, etc.



Tableau software has access to **numerous data sources and servers** such as Excel, Text File, PDF, JSON, Amazon Redshift, Cloudera Hadoop, Google Analytics, etc.



## Ease of Use

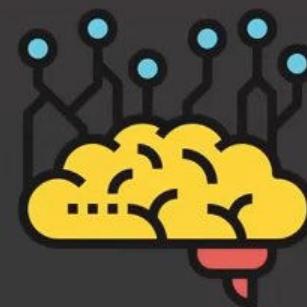


Power BI has a **slight edge** with ease of use because it is based on a user interface that is based on **Microsoft Office 365**



 **Office 365**

Tableau provides some significant advantages for **exploring data in detail**. Tableau is also coming up with **natural language capabilities**



# Programming Support



Power BI supports **DAX**, and **M** language. It can connect to **R programming** language using Microsoft revolution analytics

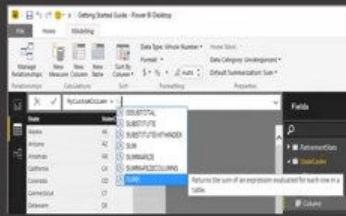


Tableau integrates much better with **R language** compared to Power BI. Tableau **SDK** can be implemented using any of four languages from **C**, **C++**, **Java** and **Python**



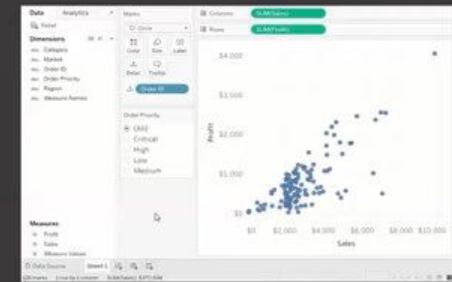
# Data Visualization



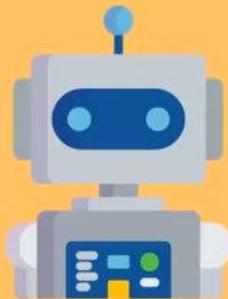
Power BI has easy **drag and drop** functionality, with features that make data **visually appealing**. It offers a wide range of detailed and attractive visualizations to create **reports and dashboards**



Tableau delivers **interactive visuals** that support insights on the fly. It can translate queries to visualizations and makes you to ask **questions, spot trends and identify opportunities**



# Machine Learning



Power BI is integrated with Microsoft Azure. It helps to understand the data and analyse the trends and patterns in the data



Tableau supports the features of Python machine learning. This enables it to perform machine learning over the dataset



# Customer Support



Microsoft Power BI is relatively younger than Tableau and hence has a **smaller community**

The screenshot shows the 'Contact support' page of the Microsoft Power BI website. At the top, there's a yellow header bar with the text 'Contact support'. Below it, a message says 'Looks like you haven't subscribed to Power BI Pro' and 'Did you know that Power BI Pro users always get fast, free support?'. There are 'PURCHASE' and 'LEARN MORE' buttons. A 'Get sign-in' button is also visible. Below this, there's a section titled 'Get free support from one of these options' with three cards: 'Guided learning' (with a video camera icon), 'Samples' (with a document icon), and 'Documentation' (with a magnifying glass icon).



Tableau has over **160,000 active users** participating in over **500 global user groups** and over **150,000 active customers** participating in the **Tableau online community**

The screenshot shows the 'Customer Portal' page of the Tableau website. At the top, there's a banner with the text 'We're helping organizations model data-driven decision during the coronavirus outbreak. Click here to learn more...'. Below it, a search bar has the placeholder 'How can we help?'. A 'Customer portal' section follows, with a 'Where do I login?' link. Further down, there are links for 'Where can I find my product key?', 'How do I get access to the customer portal?', and 'How do I create a Tableau account?'. The Tableau logo is at the top left of the page.

# HOW TO DO PREDICTIVE ANALYSIS USING PYTHON IN POWER BI

The screenshot shows the Spyder Python IDE interface. On the left, there is a code editor with Python code for model evaluation and visualization. In the center, a DataFrame titled 'dataset' is displayed with columns: Index, ID, on\_time, departments, salary, name, LR\_prediction, GB\_prediction, RF\_prediction, Lp, and LogitLoss. The data consists of 14 rows of employee information with their predicted job satisfaction levels. On the right, the 'Power Query Editor' is open, showing a table with columns: Name, Type, Size, and Value. A red arrow points from the 'Run Python script' button in the Power Query Editor's toolbar towards the bottom right of the interface.

**1** Write your enter predictive analysis code in python [Code provided in GitHub]

Use DAX to get prediction accuracy from selected cell

The screenshot shows the Power BI ribbon with the 'Formatting' tab selected. A red arrow points to the 'Data category' button in the ribbon. A message at the bottom states 'There are pending changes in your queries that haven't been applied.' with an 'Apply changes' button.

**3** Generate pie charts visuals for predictive outcome

The screenshot shows the Power Query Editor interface. At the top, there's a toolbar with File, Home, Transform, Add Column, View, Tools, and Help. Below the toolbar is a ribbon with Data Type (set to Decimal Number), Statistics, Trigonometry, Date, Time, Duration, and Information. A red circle highlights the Scripts section in the ribbon, which contains Run R script and Run Python script. The main area shows a table with columns satisfaction\_level, last\_evaluation, number\_projects, and average. To the left, under Queries [3], are dataset, model\_eval, and HR\_file\_c. On the right, there are Properties, STEPS, and a list of steps including Pre-processing data, selected\_features, and set1. A red arrow points from the bottom right towards the bottom center of the screen. Another red arrow points from the bottom left towards the bottom center of the screen.

The screenshot shows a Power BI Desktop interface with a dashboard titled "Predictive Analysis". The dashboard displays five pie charts comparing the performance of different machine learning models:

- Count of left by left: 7,448 (97.44%)
- Count of LR prediction by LR prediction: 1,740 (17.17%)
- Count of GB prediction by GB prediction: 2,036 (21.24%)
- Count of RF prediction by RF prediction: 2,498 (26.53%)
- Count of SVM prediction by SVM prediction: 3,576 (37.13%)

Below each pie chart is a box showing the model name and its accuracy score:

- Logistic Regression: 0.7701...
- Gradient Boost: 0.9805...
- Random Forest: 0.984
- SVM: 0.9645...

A red arrow points to the "Optimize" tab in the ribbon. A modal dialog box is open, stating "There are pending changes in your queries that haven't been applied." It contains two buttons: "Apply changes" and "Discard changes".

The ribbon tabs include: File, Home, Insert, Modeling, View, Optimize, Help.

The left sidebar includes: Paste, Get data, Excel, Data, SQL, Enter data, Data, Recent sources, Transform data, Refresh data, Queries, New visual, Text box, More visuals, Insert, New measure, Quick measure, Calculations, Sensitivity, Publish, and Share.

The right sidebar includes: Data, Visualizations, Filters, and a search bar.

# POWER BI SERVICE

The diagram illustrates the three components of the Power BI ecosystem:

- Power BI Desktop:** The leftmost interface shows a desktop application window with multiple visualizations (a bar chart, a matrix, and a map) and a sidebar for "Visualizations" and "Fields".
- Power BI service:** The central interface shows a web-based dashboard titled "OVERVIEW" with summary metrics (\$4,655, \$720, \$920, \$4,893, \$1,931, \$17,227) and a detailed table of sales data for various countries and segments. A yellow arrow points from the desktop interface to the service interface.
- Power BI Mobile:** The bottom-left interface shows a mobile phone displaying a simplified version of the Power BI service dashboard, with a yellow arrow pointing from the service interface to the mobile interface.

[Top 15 Power BI Project Ideas For Practice  
2023 \(mindmajix.com\)](https://www.mindmajix.com/power-bi-project-ideas)

# Data Source(s)

- Bank Churn Analysis by Gurpreet  
Video: End to End power BI Project – Customer Churn Analysis | Power BI Mastery, Source: <https://www.youtube.com/watch?v=HHu0FLM6Fp0> , Data source: Download Bank Customer Churn Data: <https://tinyurl.com/z4r3mv34>
- Telecom churn analysis by Satyajit, Video:  
<https://www.youtube.com/watch?v=Xu5x-vn8J6M> , github source  
<https://github.com/pik1989/ChurnAnalysisProject-PowerBI/>

# Presentation Sources

- Data Modelling In Power BI | Types Of Data Modelling In Power BI | Power BI | Simplilearn  
[https://youtu.be/-\\_DJPRrFQXI](https://youtu.be/-_DJPRrFQXI)
- <https://oprismonicasimona.wixsite.com/biconsultancy/single-post/2016/03/30/user-experience-design>
- Power Bi vs Tableau | Power Bi And Tableau Difference | Which One To Choose? | Simplilearn [https://www.youtube.com/watch?v=b\\_ODnhv68OI](https://www.youtube.com/watch?v=b_ODnhv68OI)
- Gartner Magic Quadrant for Business intelligence,  
<https://www.gartner.com/reviews/market/analytics-business-intelligence-platforms>
- G2 Top 20 Analytics Platforms for enterprises, [https://www.g2.com/categories/analytics-platforms?tab=highest\\_rated&utf8=%E2%9C%93&segment=enterprise&region=](https://www.g2.com/categories/analytics-platforms?tab=highest_rated&utf8=%E2%9C%93&segment=enterprise&region=)



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