# Power BI Introduction & Demo

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# Agenda

- What is Power BI (PBI)?
- Roadmap
- Tool capabilities
  - Data connectivity
  - Data prep and modelling
  - Interactivity
  - Sharing & publishing
  - Administration, monitoring, security & embedding
- Possible architectures modes
- Licensing model(s)
- Demo
- Q&A

# What is Power BI?

- **Power BI is a single product**
- Power BI Desktop
- Power BI Online (Service)

- **Power BI delivers a mature and full-blown analytics service, allowing the end-user to ingest, prep & create their own data models based on numerous data sources**
- Extensive (self-service) data preparation capabilities (Power Query – M language)
- Modelling engine which enables to create data models (Power BI Desktop – DAX Language)
- Drag and drop interface to create interactive reports & dashboards (Power BI Desktop – DAX Language)

=

Data preparation
(Power Query – M)

+

Visualization & Reporting
(Power BI Desktop – DAX)

# What is Power BI?

## THE MOST USED COMPONENTS

(Local)
Power BI Desktop

(Online)
Power BI Service

| Component | Power Query Editor | Dataset | Report | Workspace | App/ Dashboard |
|---|---|---|---|---|---|
| Goal | Connect, load transform | Data modelling and measure creation | Create interactive report | Grouping of reports and/ or datasets belonging to an entity within the organisation | Distribution channel of reports/ dashboards |

# Roadmap

- **Microsoft is an undisputed leader with the Power BI offering**
- Ease-of-use
- A lot of documentation, a lot…
- Comprehensive product vision
- **Power BI Desktop & Online are updated on a monthly basis**
- Rapid succession of changes
- Many capabilities still on the roadmap (**Fabric**, **Co-pilot**, Github, …)
- **Power BI Community**
- 50,000 people weekly visitors
- 5,000 topics added each month

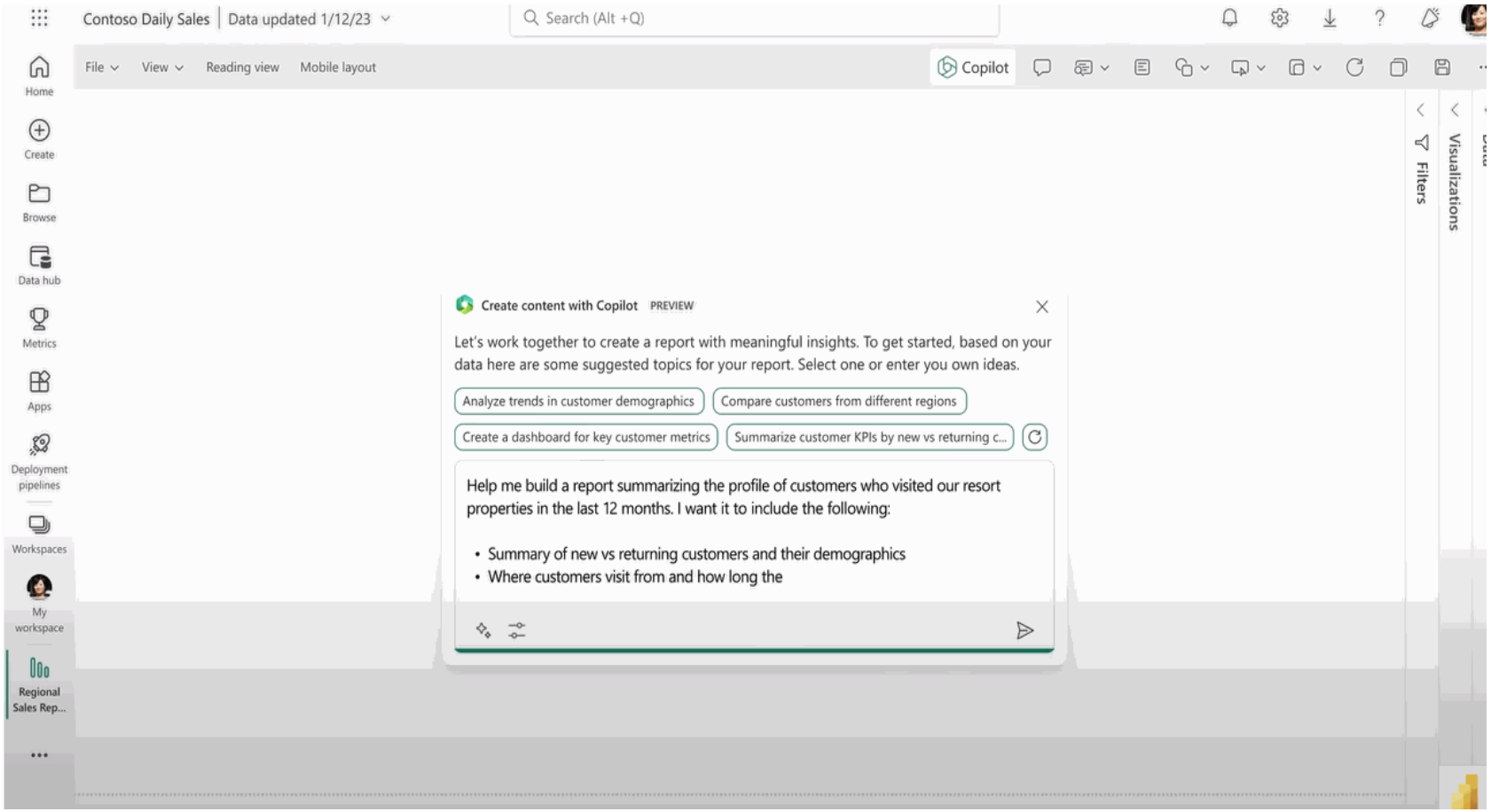
**Figure 1: Magic Quadrant for Analytics and Business Intelligence Platforms**

Source: Gartner

# Roadmap (Fabric, Co-pilot)

- **Speed up report development**
- **Fully interactive**
- **Dynamic layouts**

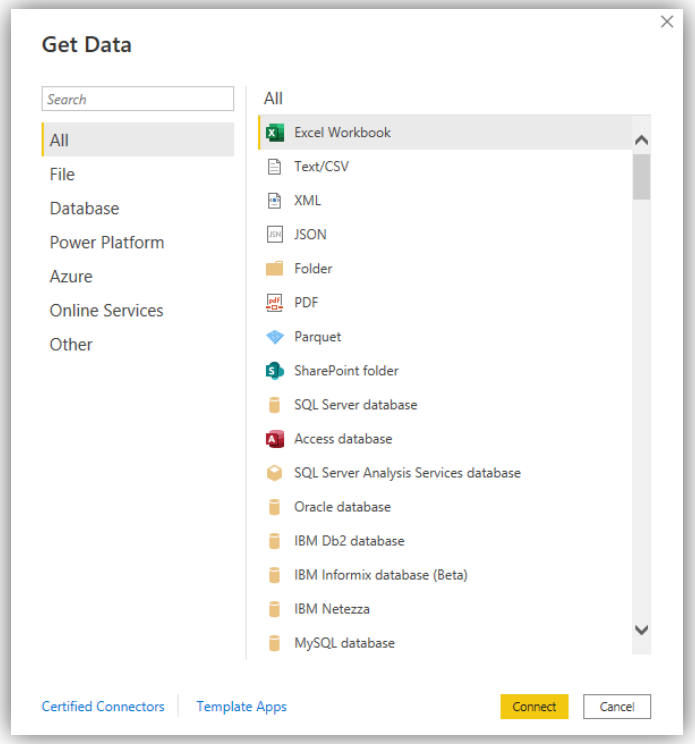
- **Of course:**
- Data model
- Metadata
- Only a ‘start’



# Tool capabilities

## DATA CONNECTIVITY

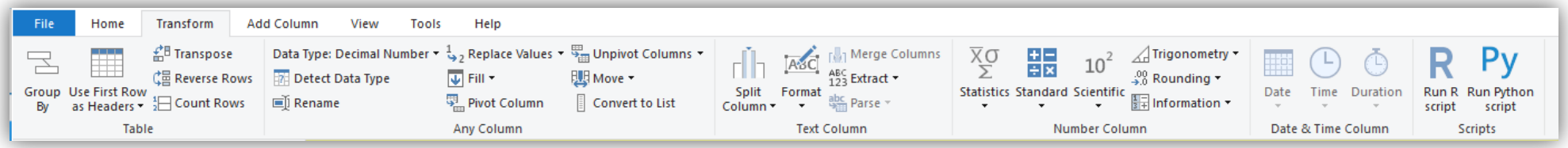
- Supports a large set of different data sources (+120) out-of-the-box
- Storage: DirectQuery/ Import/ Live/ Hybrid
- Combination of various sources is possible



# Tool capabilities

## DATA PREP AND MODELLING

- Extensive data preparation capabilities (Power Query – M language)
  - Transform columns, replace values, split columns, …
  - (Un)Pivot data
  - Add indexes, group data, merge data, …
  - Use functions to automate Excel operations (eg read multiple Excel tabs)

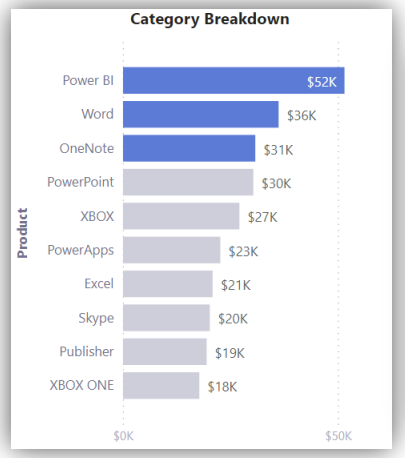


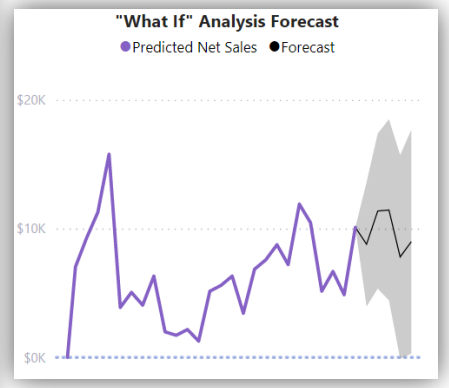

- Extensive data modelling possibilities (Power BI desktop – DAX language)
  - Possible to join data sources of different types
  - End-user can define own measures, columns to gain data insights
  - End-user is able to create own semantic models/data sources

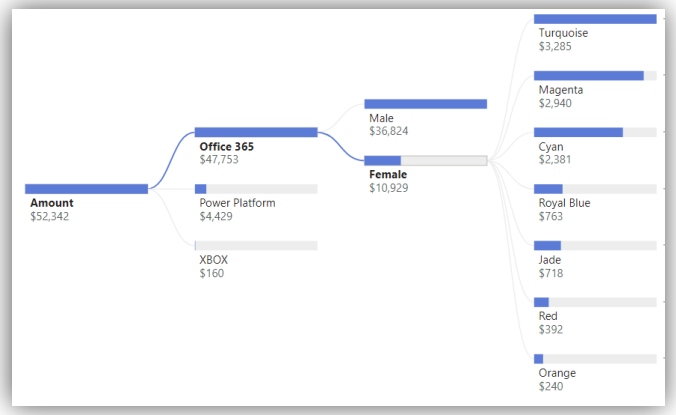
# Tool capabilities

## INTERACTIVITY

- **Most common charts and visualizations available with a decent amount of options**
- **Very small learning curve for basic dashboarding**
- Very user friendly ('Excel'-like interface)
- Interaction experience
- Machine learning & advanced analysis capabilities out -of-the box
- **Drilling, navigation, and AI possibilities**
- **Visuals can be extended with marketplace visuals**
- **Tooltips on both objects as visual (default and custom)**



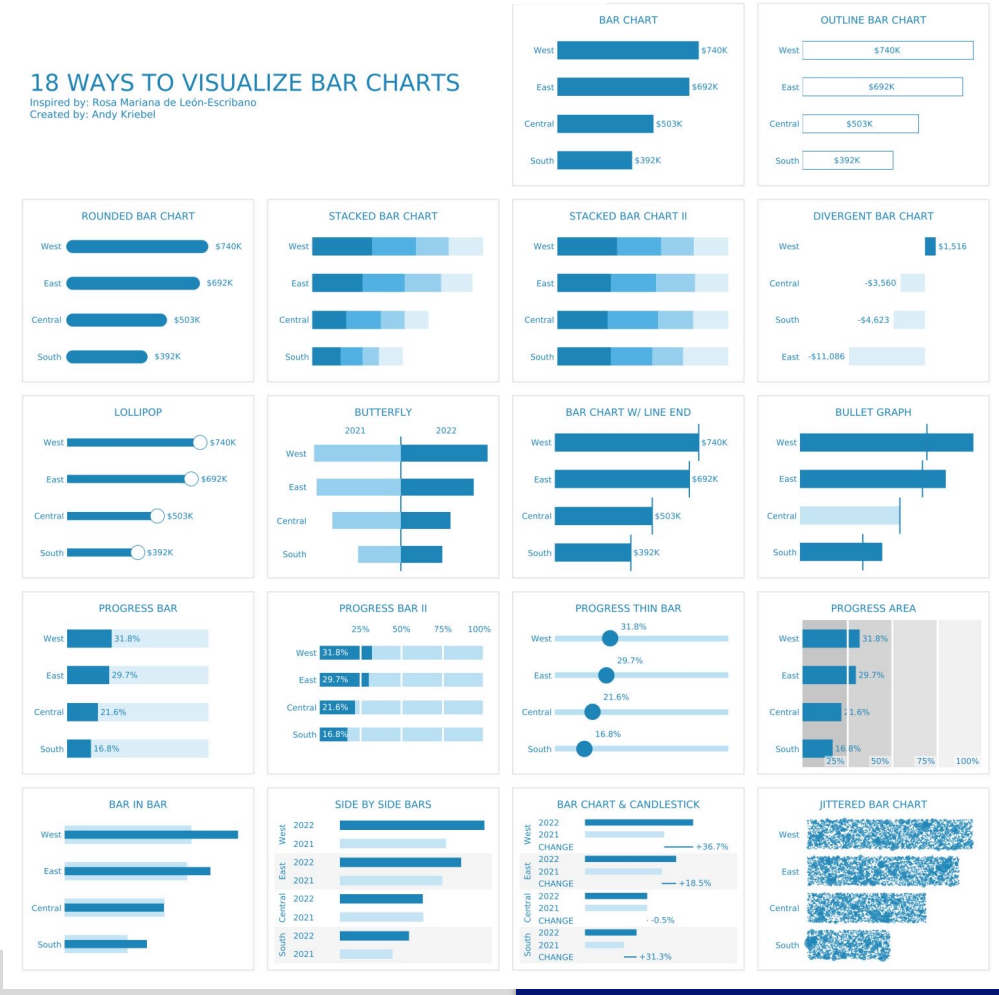



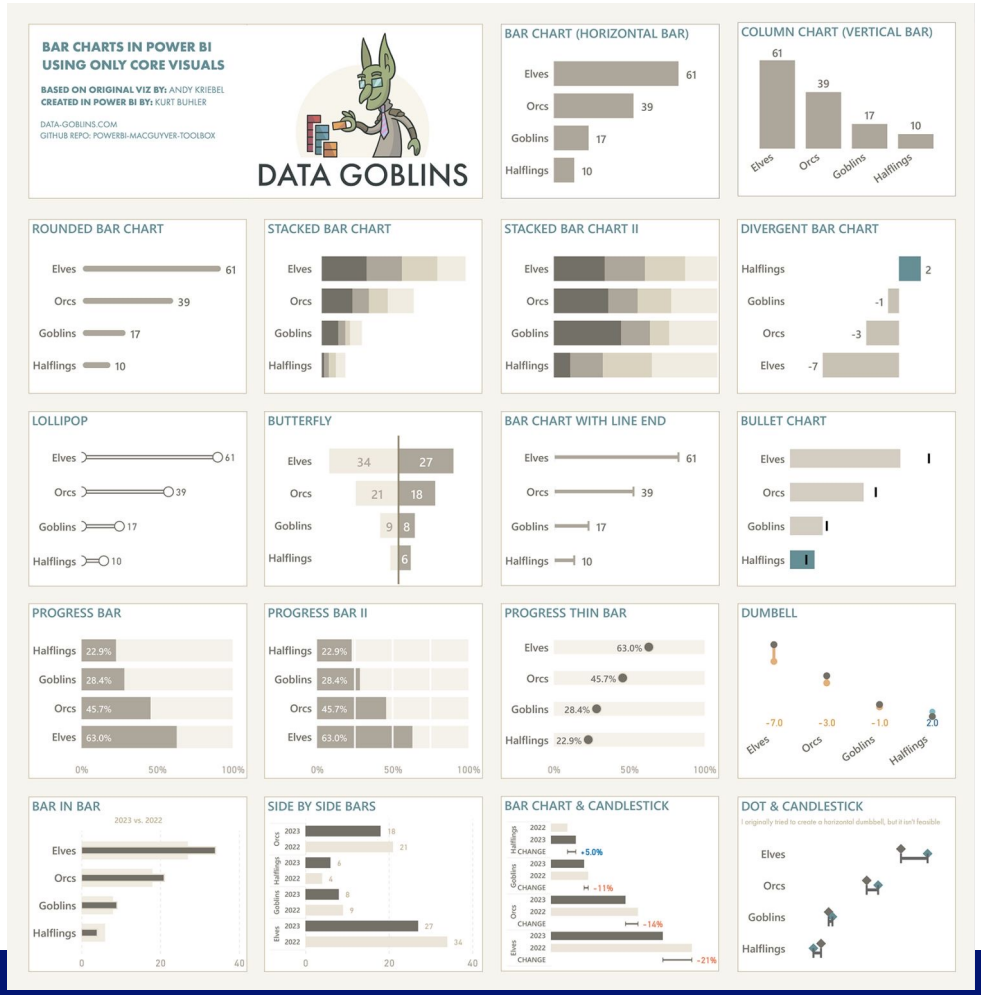
# Tool capabilities

## VISUALIZATIONS

tableau



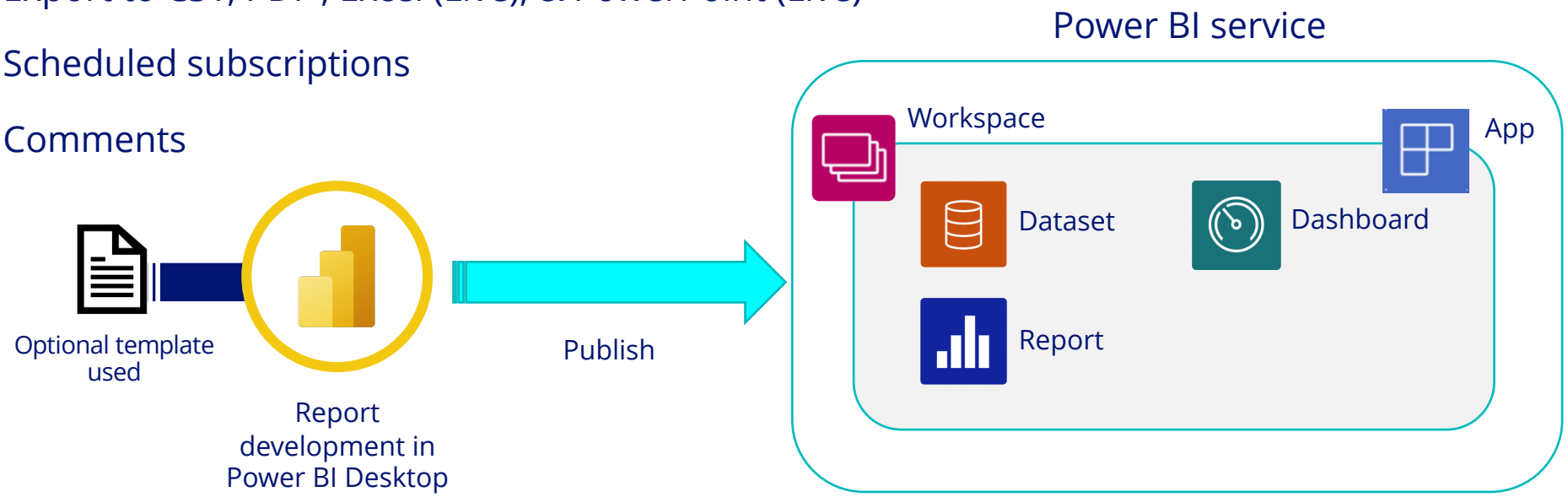

Power BI



# Tool capabilities

## SHARING & PUBLISHING

- All Power BI components resides in workspaces
- Power BI reports are created locally and published to the service
  - Report (containing visuals)
  - [Shared] Dataset (containing semantic layer, business logic, measures, calculated columns, …)
- Export to CSV, PDF , Excel (Live), & PowerPoint (Live)
- Scheduled subscriptions
- Comments

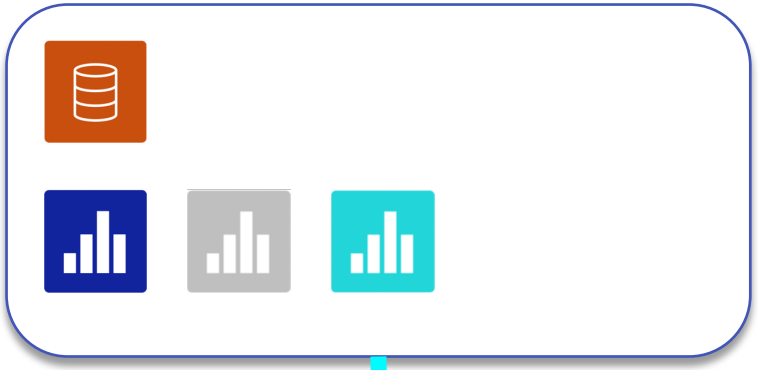


# Tool capabilities

## SHARING & PUBLISHING

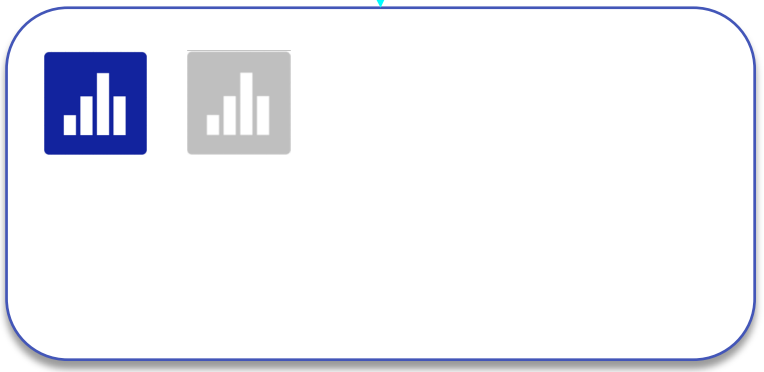
- What we see in corporate environments

Workspace



| Goal | Roles |
| --- | --- |
| Space to work together on Power BI artifacts | Admin<br>Member<br>Contributor<br>Reader |

App

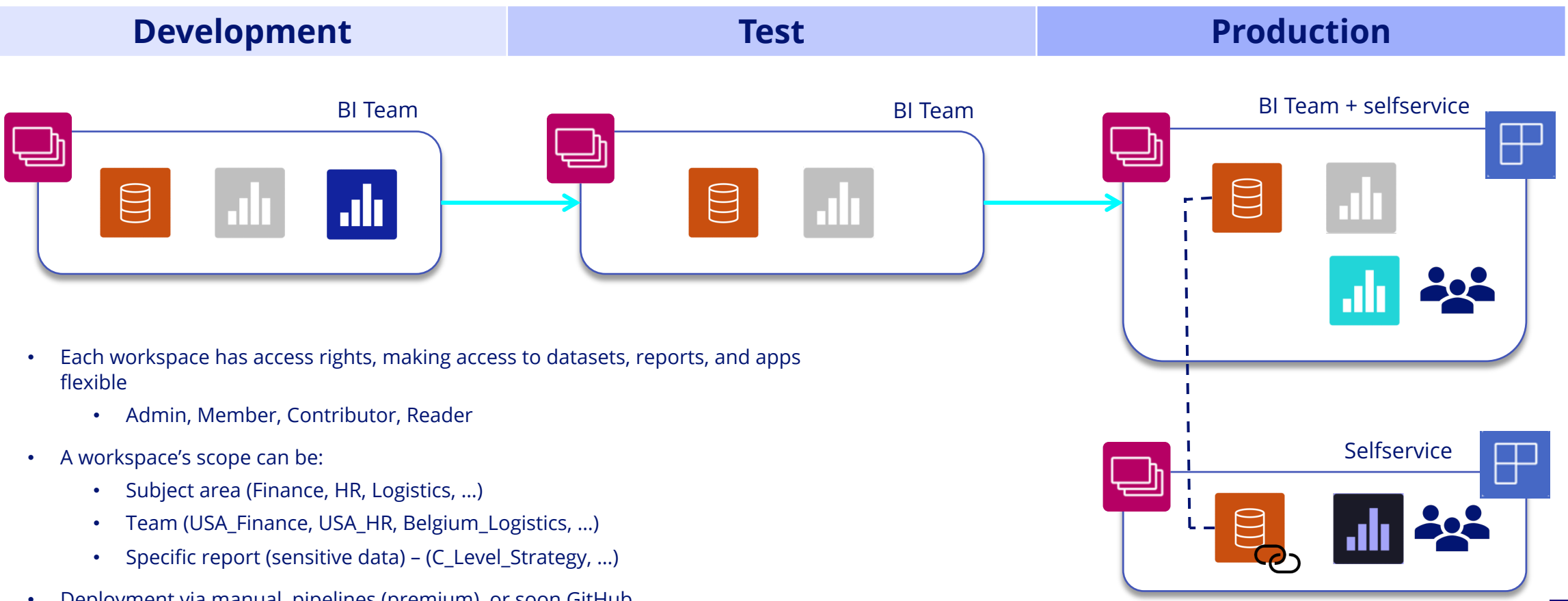


| Goal | Roles |
| --- | --- |
| Each workspace can have one app, this is a collection of reports placed in an app like experience | Reader |

# Tool capabilities

## SHARING & PUBLISHING

- What we see in corporate environments

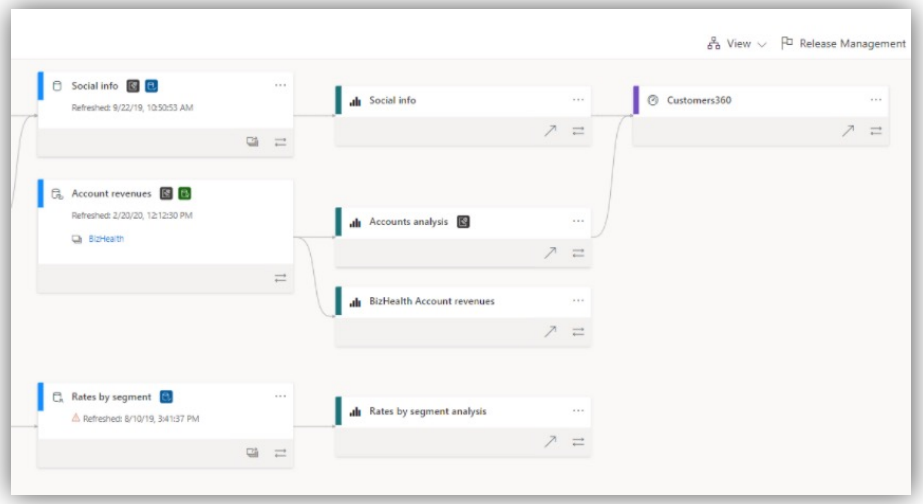


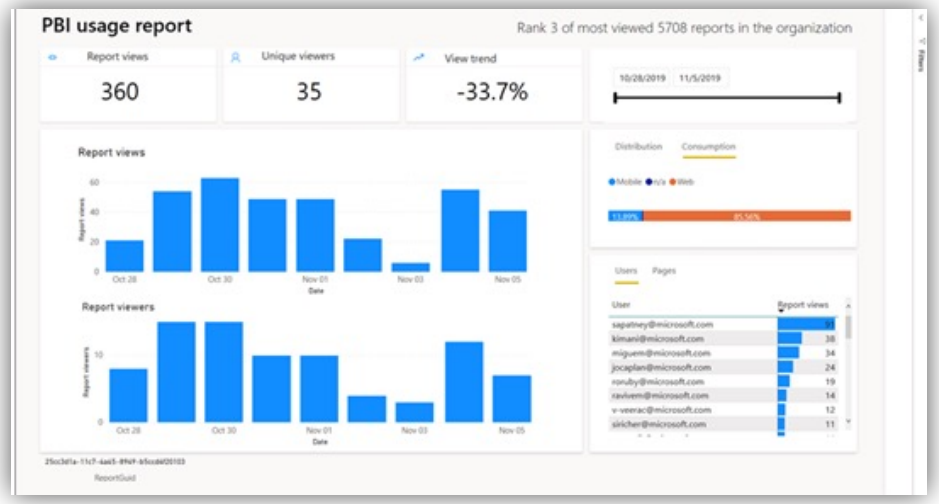

- Each workspace has access rights, making access to datasets, reports, and apps flexible
  - Admin, Member, Contributor, Reader
- A workspace's scope can be:
  - Subject area (Finance, HR, Logistics, …)
  - Team (USA_Finance, USA_HR, Belgium_Logistics, …)
  - Specific report (sensitive data) – (C_Level_Strategy, …)
- Deployment via manual, pipelines (premium), or soon GitHub

# Tool capabilities

## ADMINISTRATION, MONITORING, SECURITY & EMBEDDING

- Power BI allows for tenant management
  - Governance policies (workspaces)
    - Lineage of measures in datasets
  - Usage monitoring (reports, data sources, O365 licenses, …)
- Workspaces allow for security implementation



# Tool capabilities

ADMINISTRATION, MONITORING, SECURITY & EMBEDDING

## Data security

- **Dynamic row-level security** (DRLS)
- **Restricts** data views across an organization.
- Enforced by **DAX**
  - Filters the **dataset** based on the Power BI service user's log-in credentials

- **Object-level security** (OLS)
- **Restricts** access to sensitive tables, columns and their metadata
- Configurable via the **tabular editor** (free external tool as addon)

Table

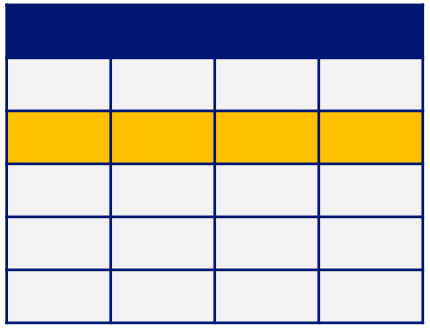


Table (Column)

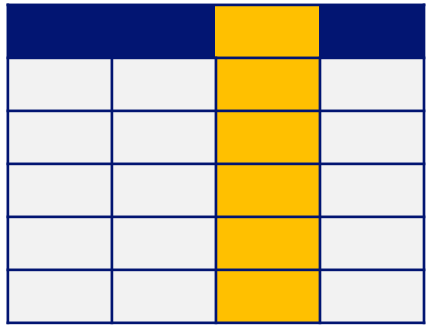
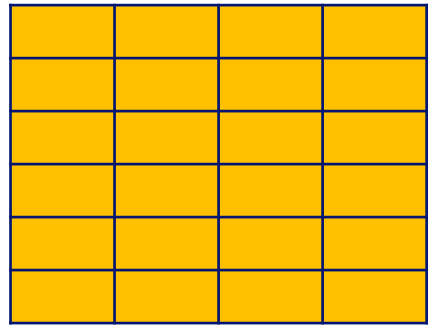


Table (Full table)

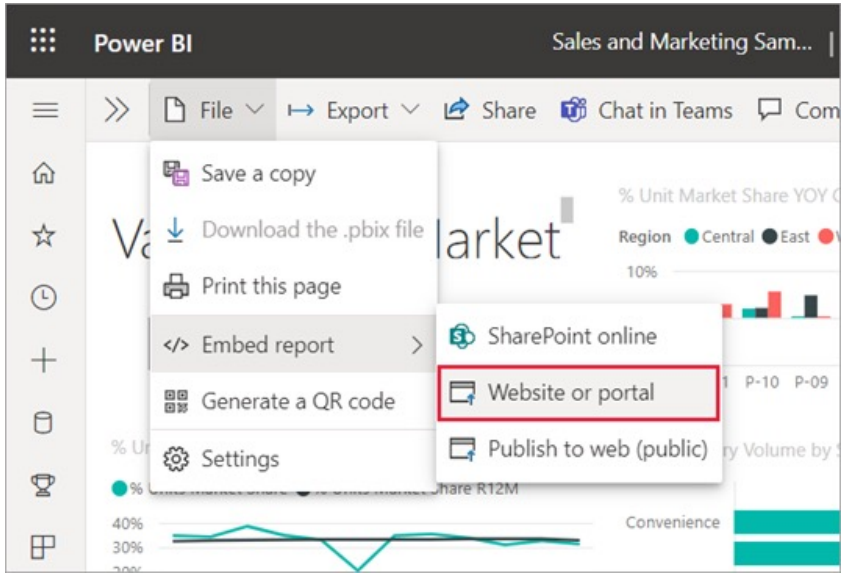


# Tool capabilities

ADMINISTRATION, MONITORING, SECURITY & EMBEDDING

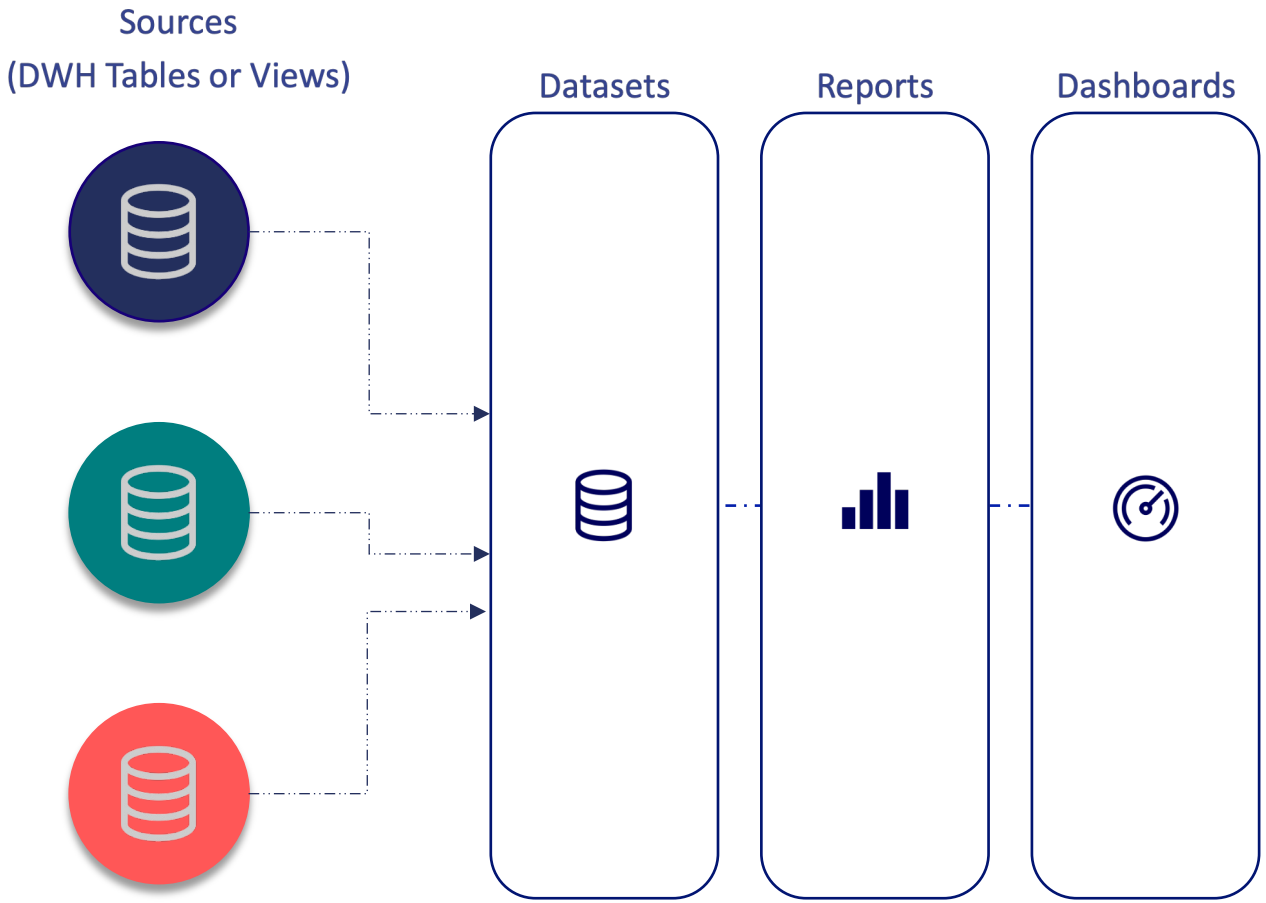
## Embedding

- **Easy** setup
  - **Link** to report
  - **Embed** for your organization (**SSO**)
- **Filter possibilities**
- **(D)RLS applied**
- **License** according to the **policy**
  - Pro, Premium, None



# Architecture modes

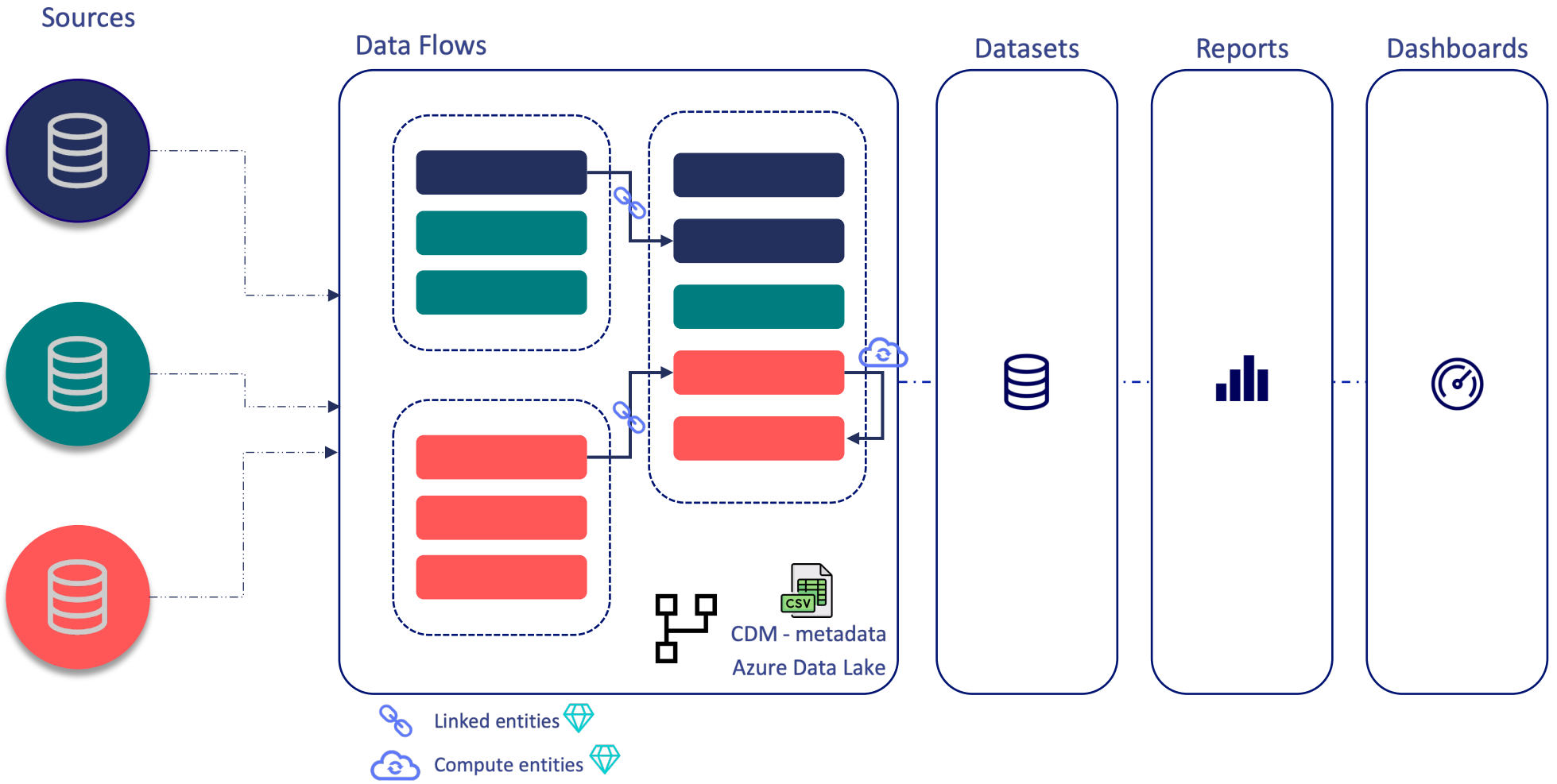
## THE POWER BI 'DATA SET'



# Architecture modes

## THE POWER BI 'DATA FLOW'

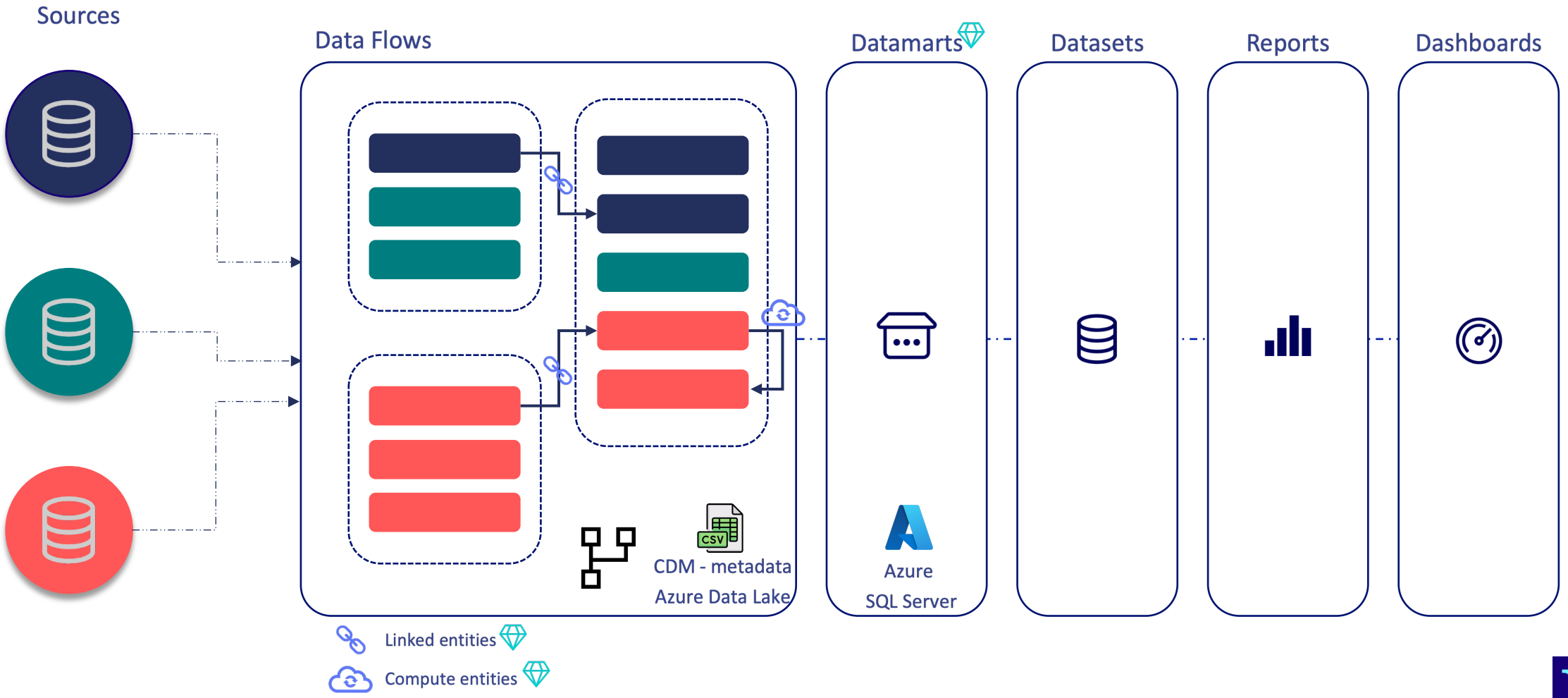
Only available with Premium subscription



# Architecture modes

## THE POWER BI 'DATA MART'

Only available with Premium subscription



# Licensing models

## Desktop

**Free**
**per user**

- Author own reports
- Share 'offline'

## Pro

**€9,40**
**per user/ month**

- Create, share & collaborate

Features:
- Included in M365 E5
- Shared storage
- 1GB/ dataset
- 8 refreshes/ day
- Dataflows

## Premium/ user

**€18,70**
**per user/ month**

- Leverage premium features

Features:
- Pro
- Shared storage
- 100GB/ dataset
- 48 refreshes/ day
- Full Dataflows
- Datamarts
- Application lifecycle
- XMLA endpoint

## Premium/ capacity

**From €4.675,60**
**per capacity/ month**

- Large scale (> 500 consumers)

Features:
- Pro
- Dedicated storage
- 400GB/ dataset
- 48 refreshes/ day
- Full Dataflows
- Datamarts
- Application lifecycle
- XMLA endpoint
- **Consume content without a per-user license**

Prices as of July 2023

**Full feature list available: https://powerbi.microsoft.com/en-us/pricing/**

# POWER BI

DEMO

# Conclusion

- Very suitable for business users with **limited technical knowledge**
  - Excel approach
- Can get ‘difficult’ when bad practices are applied like:
  - **Bad data model** construction
  - **Rocket science DAX** formulae
- **Quick setup** gives the ability to set up dashboards in no time
- **Extensive** training resources, libraries & forums available
- Strong **community**
- In time, Power BI will become **the single data analytics platform, Fabric**

# WHY CHOOSE POWER BI WITH EPICDATA?

# WE FOCUS ON WORKING TOGETHER

**ITERATIVE APPROACH**

**CO-CREATION**

**PRAGMATISM**

# WE THINK FURTHER THAN A TOOL

**FULL E**
**SERVI**

**NING &**
**ATA**
**DMAPS**

# OUR POWER BI DATA ROADMAP

### Be inspired by the power of data viz

Introduction **keynote**: "The power of data are graphs" - how to become **data & graph literate?**

### Assessment of your data adoption level

Via **surveys**, we define your **current level** of data adoption and **discuss** the results with you.

### Define the needs

Based on the results, with the help of **our experts**, we define your **destination level(s)** and how to get there.

### Training formats

We provide the **right training format** and **calendar** for your business

### Re-assessment of your data adoption level

We provide a timely **re-assessment** to define how your team has **grown**.

### Let's build a Data Community

We make sure everyone can learn in a **continuous** way

THANK YOU

Q&A