Power BI Datamarts

What is it and how do I benefit from it?

Guy in a Cube:

“A datamart is the access layer of the data warehouse environment that is used to easily analyze and distribute data to the users.”

Watch the video at: https://youtu.be/ZJzCkxv5wxg

Matthew Roche:

“Power BI Datamarts are like dataflows with benefits”

Read more on Matthew his blog: https://ssbipolar.com/2022/05/25/dataflows-with-benefits/

I’ll take you on a journey through my investigation on datamarts.

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Microsoft Power Platform
FASTTRACK RECOGNIZED
SOLUTION ARCHITECT
2022

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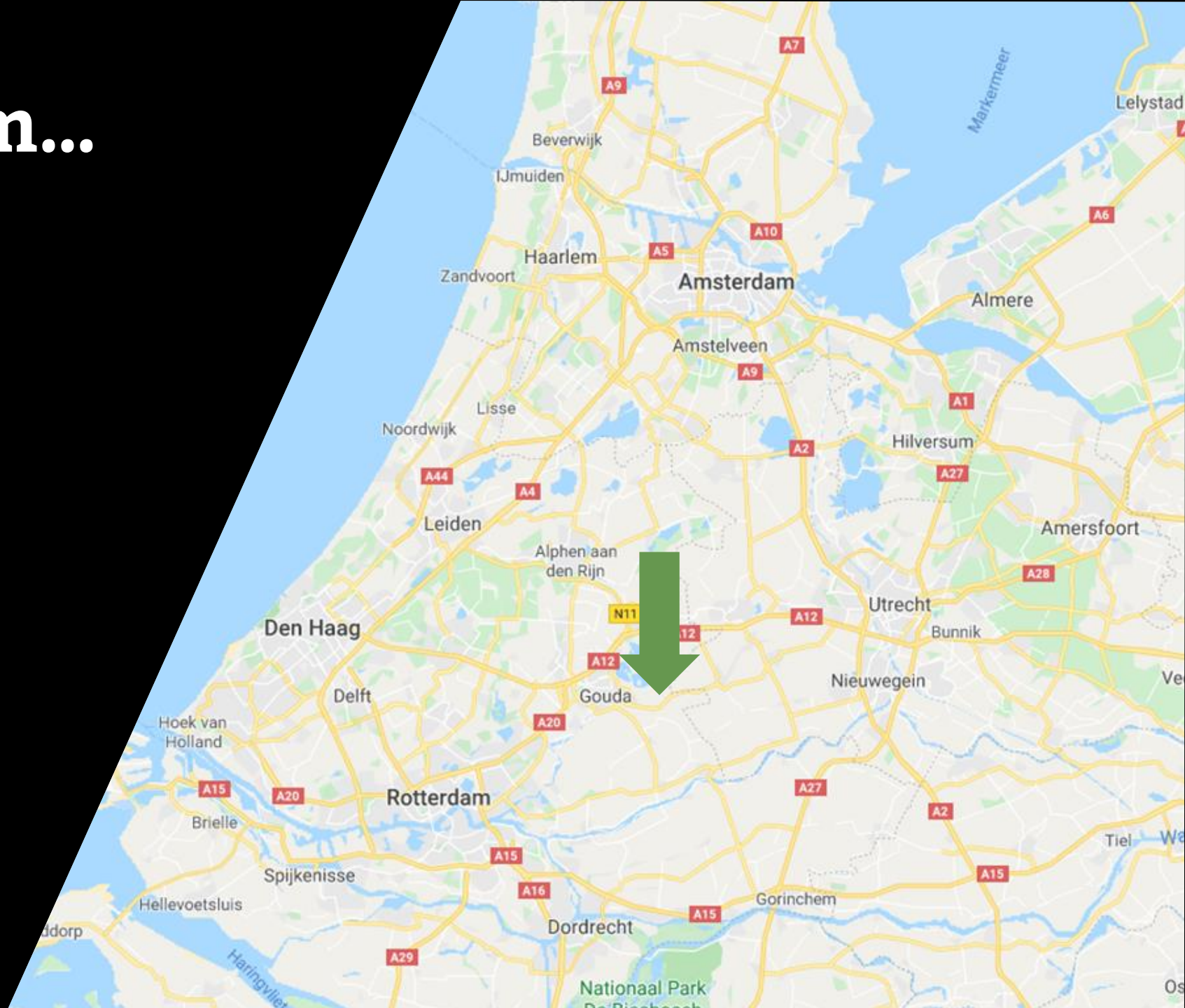
Where I’m from...



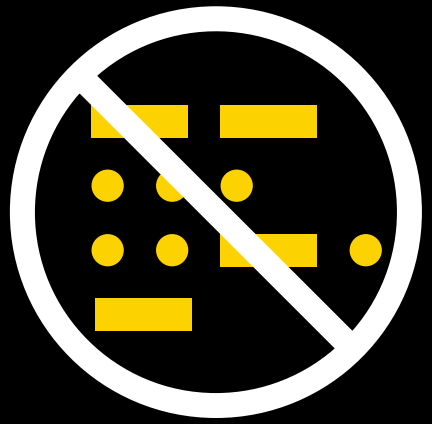
What we cover today

- Datamarts… say what?
- Understanding the fundaments of Datamarts
- Consuming Datamarts
- Let's build a datamart together!
- Open ends…

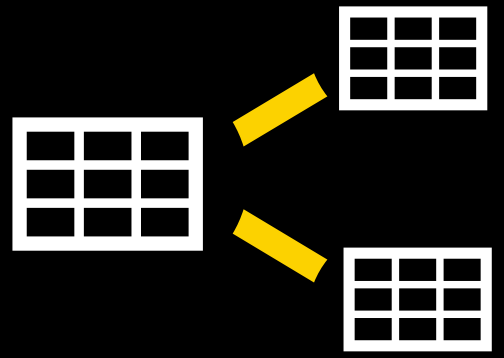
Datamarts… Say what?

What are Datamarts?

Self service relational database capabilities without IT involvement



No-code experience for data ingestion, preparation and transformation



Build semantic models in a holistic cloud experience

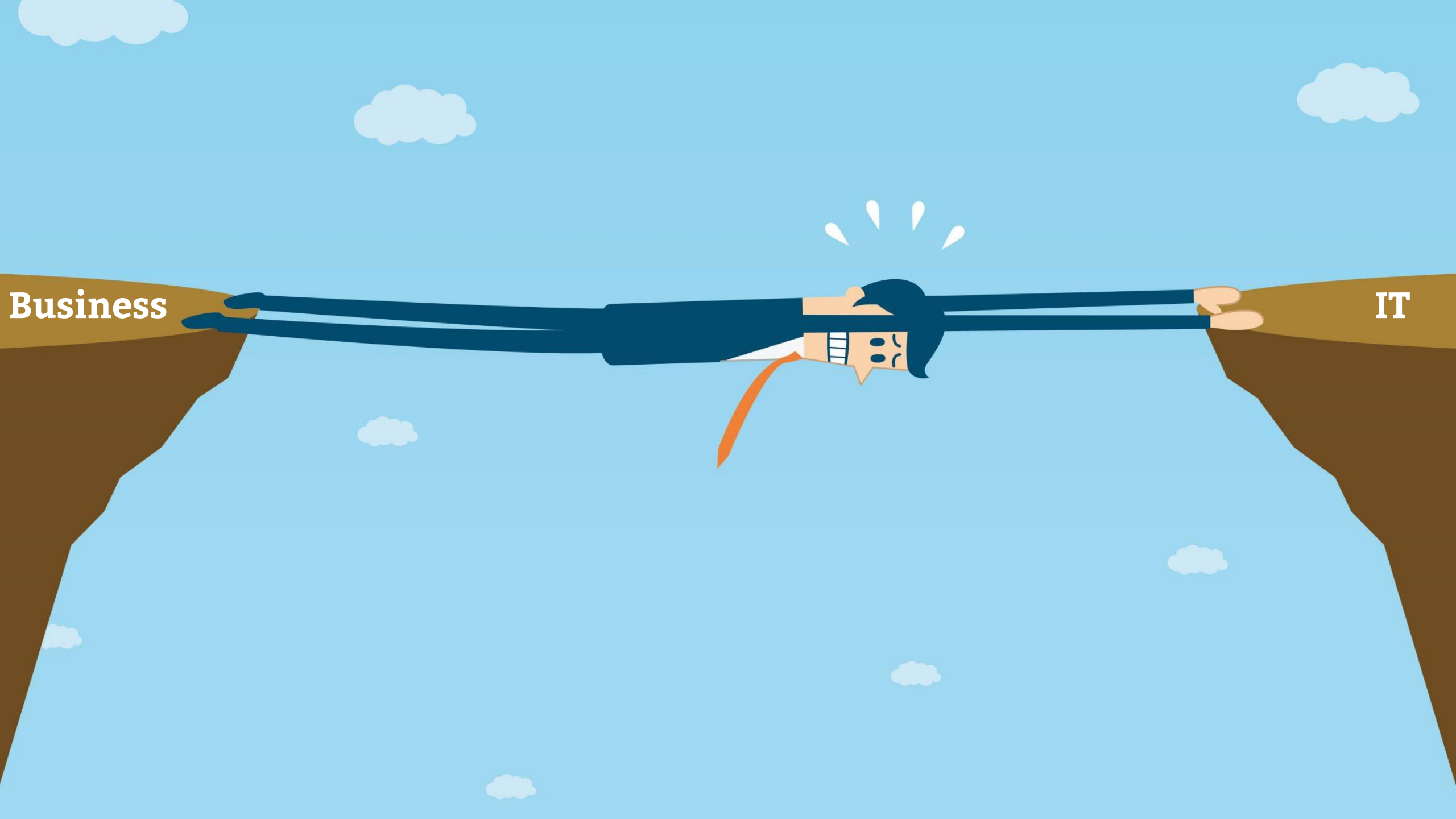
What is it NOT?

Replacement for
Power BI datasets

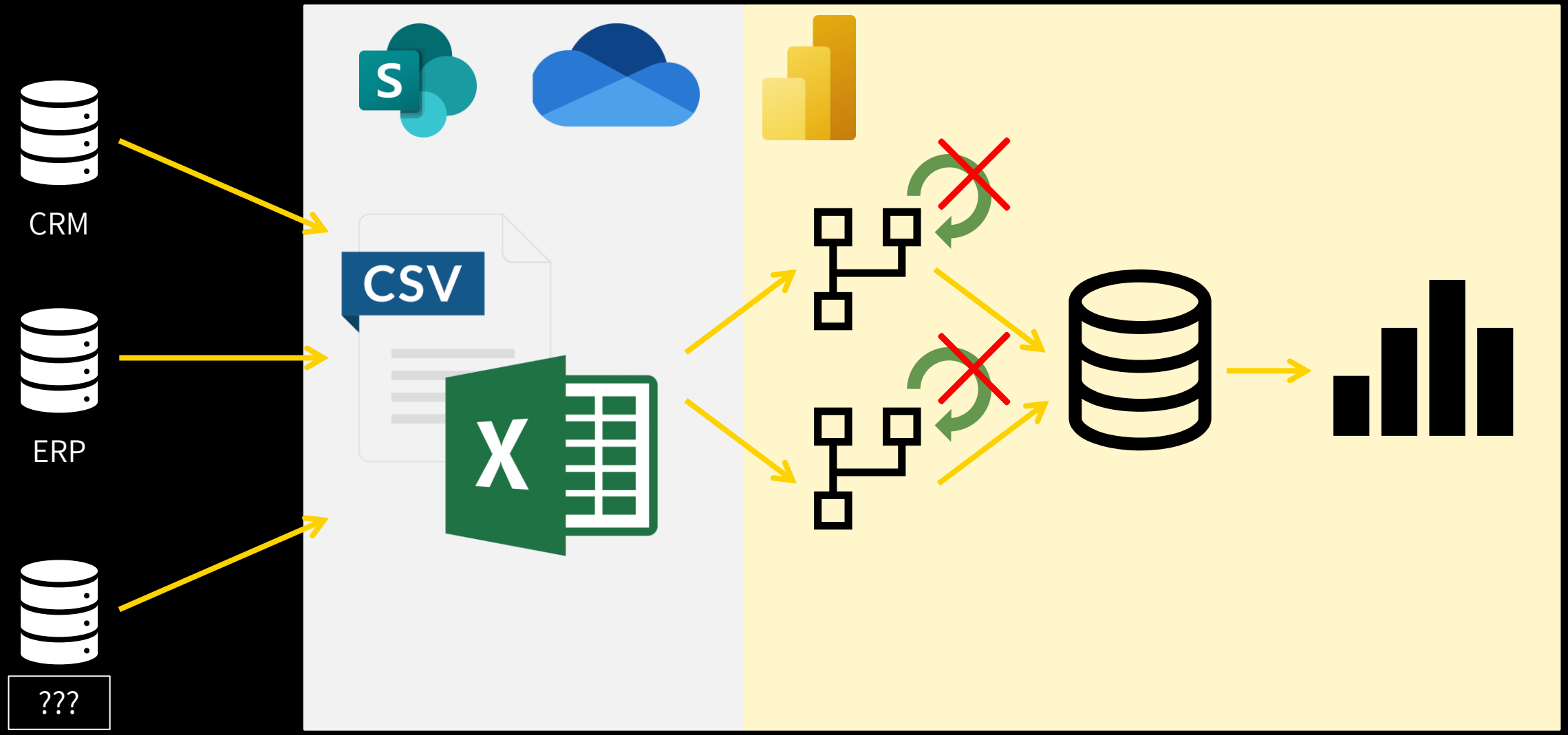
Replacement for
Power BI dataflows

Replacement for
Power BI Desktop

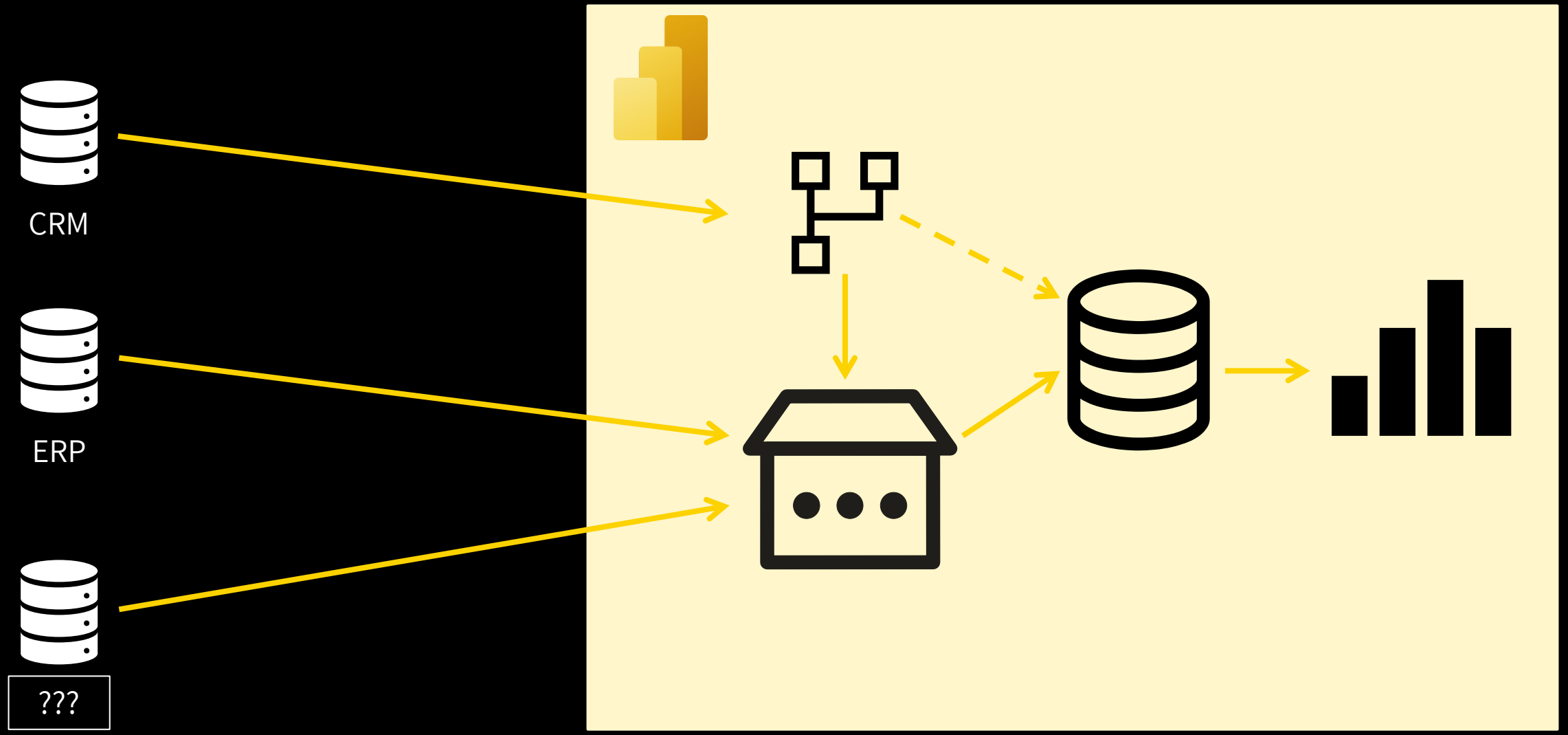
Replacement your
data platform / DWH


Business
IT

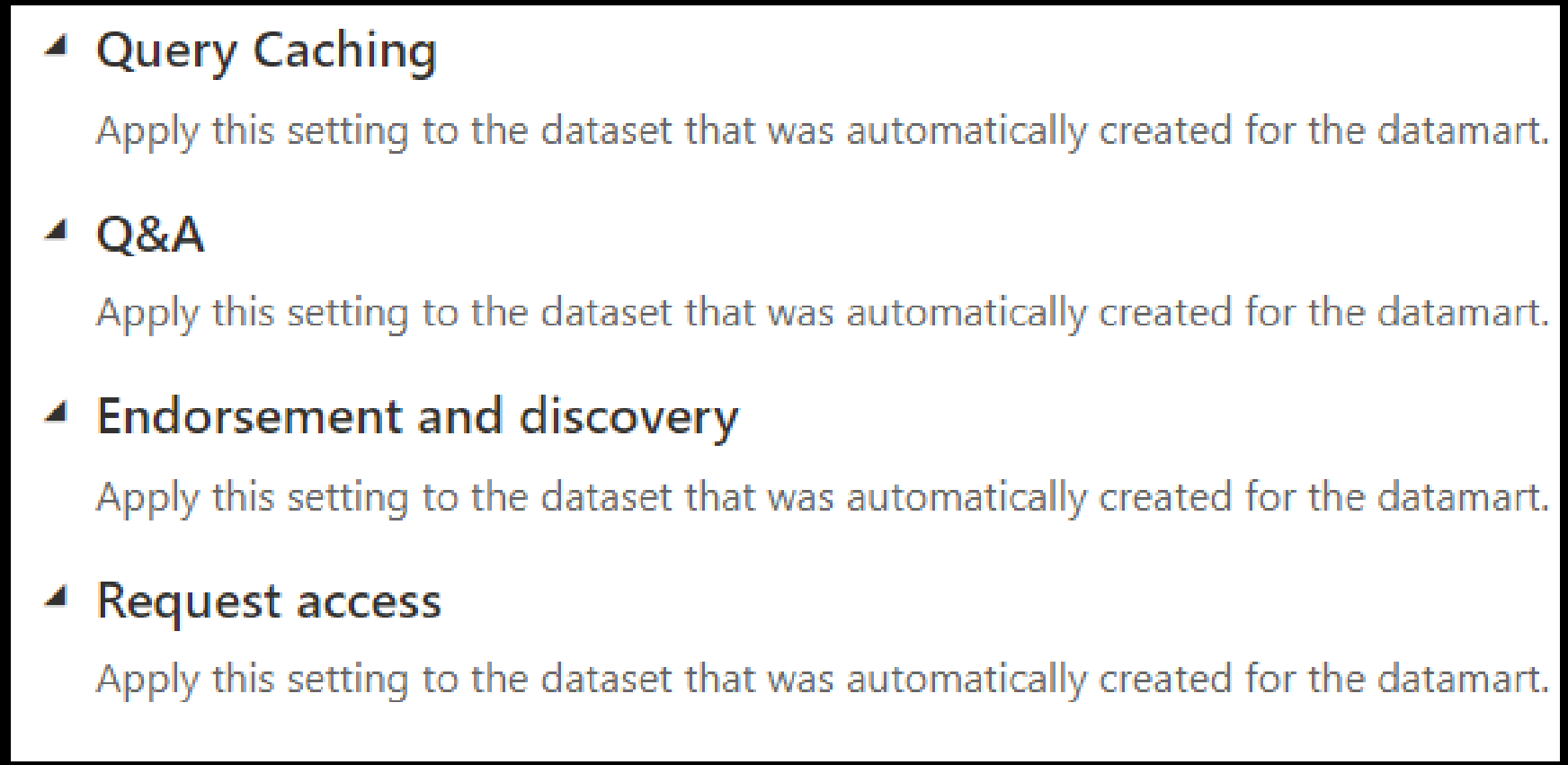
(Power) BI Development today



(Power) BI Development today



Auto generated and managed experience



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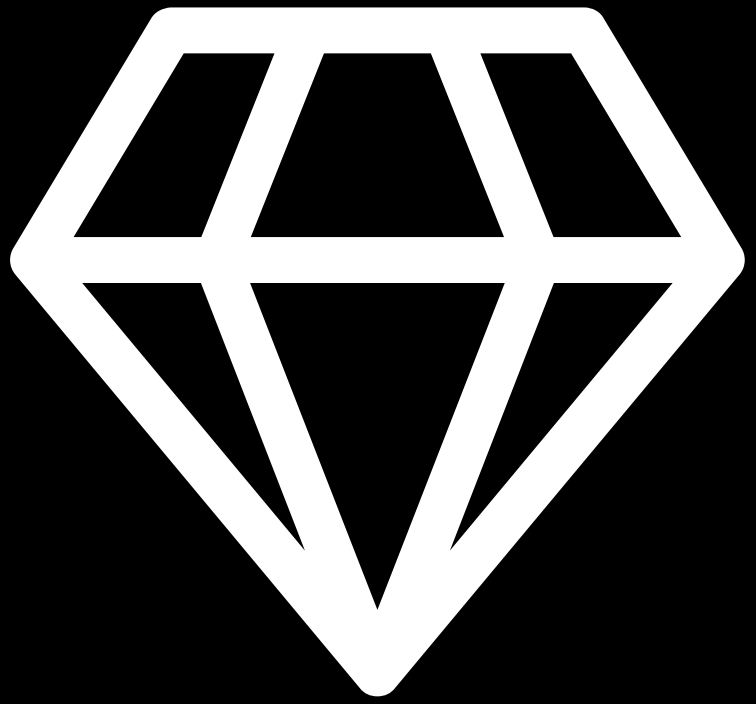
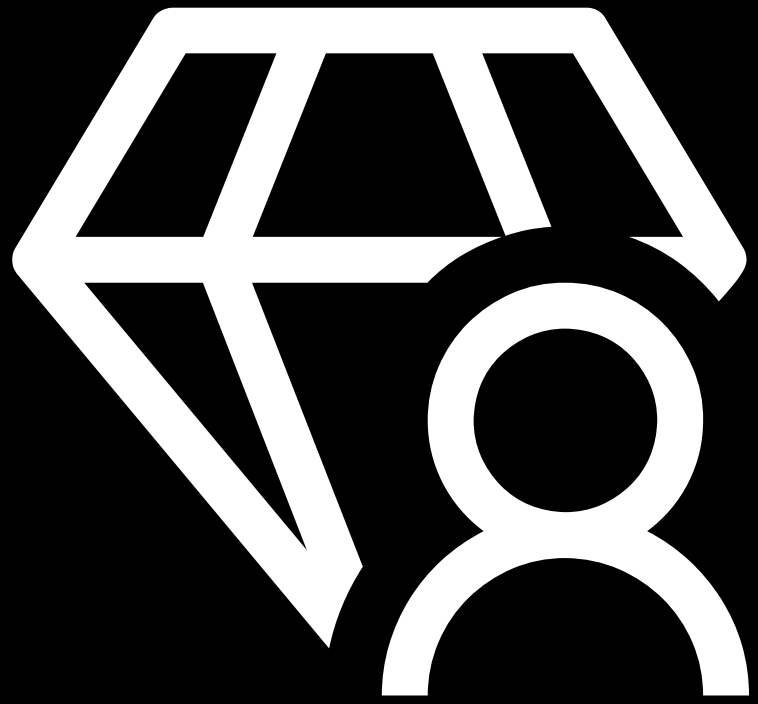
Understanding the fundaments of datamarts

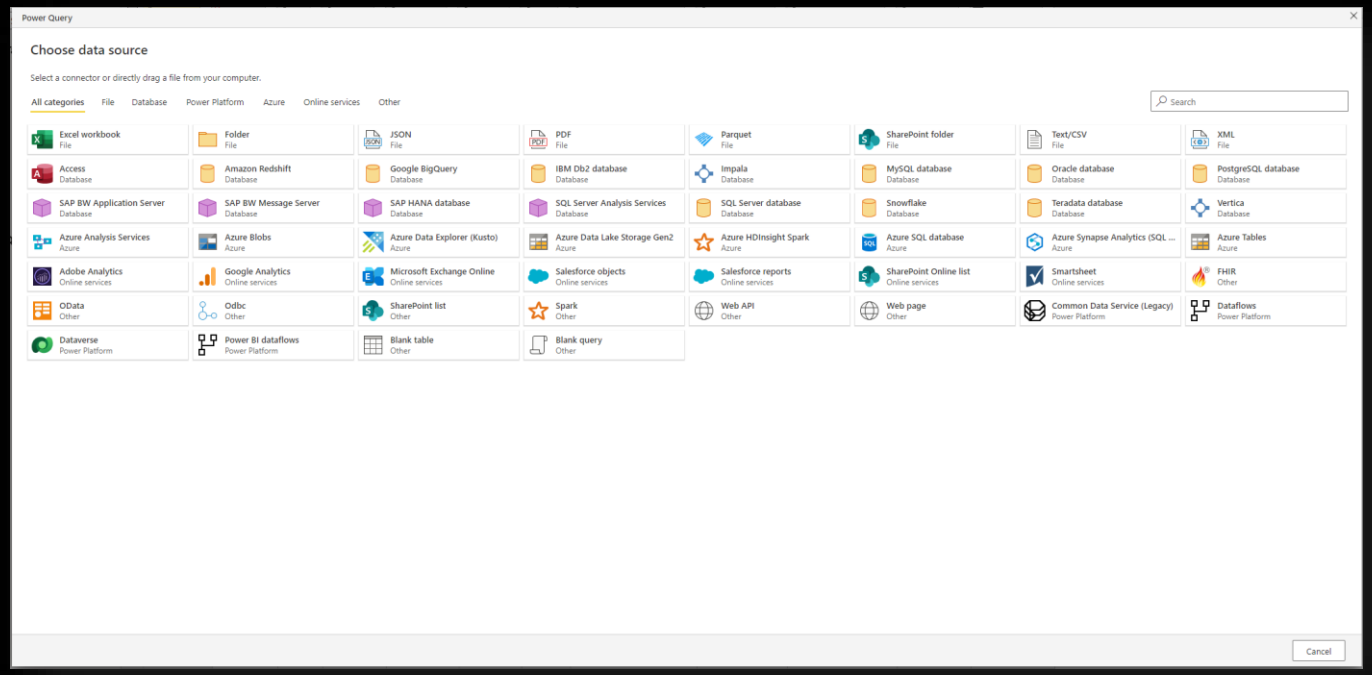
Any type of premium





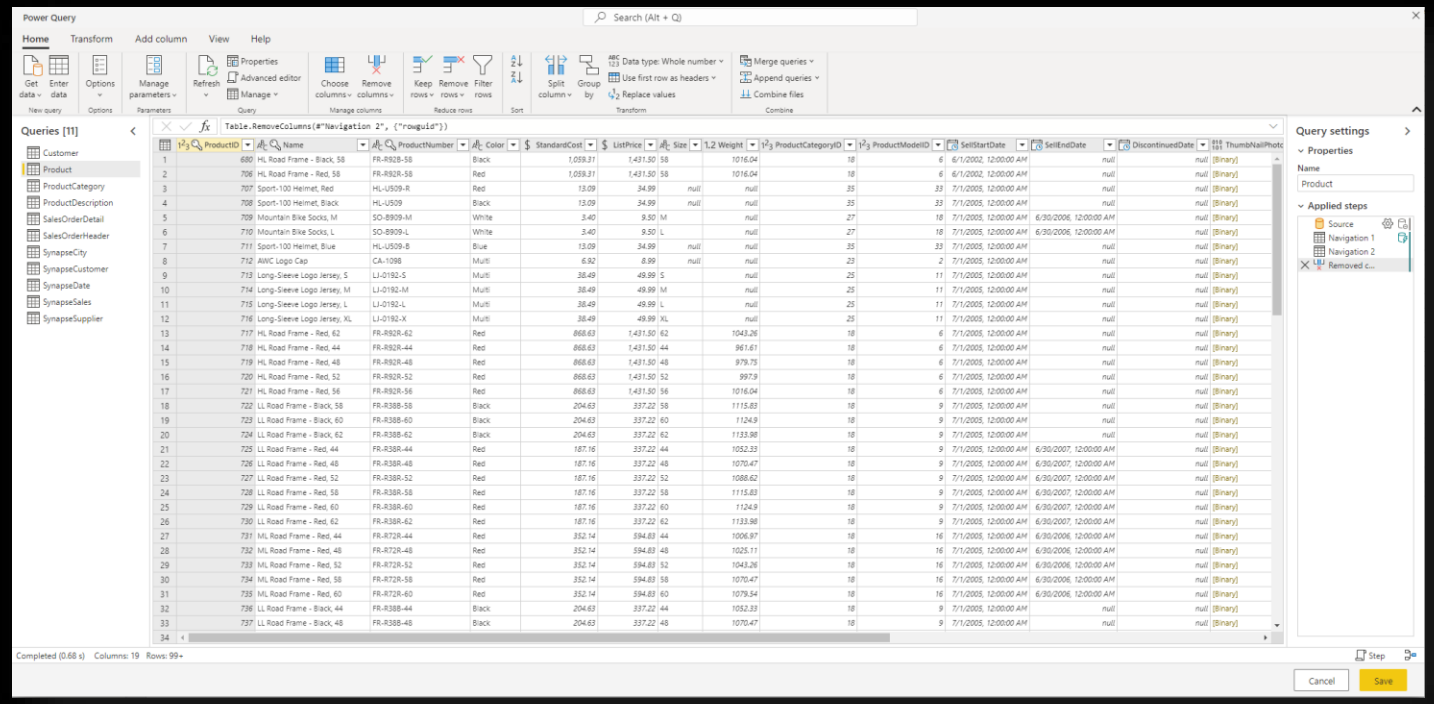
Datamarts or dataflows?

Ingest new sources, all the Power Query connectors are available!



Datamarts or dataflows?

The web-based experience we all know from dataflows to transform data. But now data is loaded in a fully managed Azure SQL Database.



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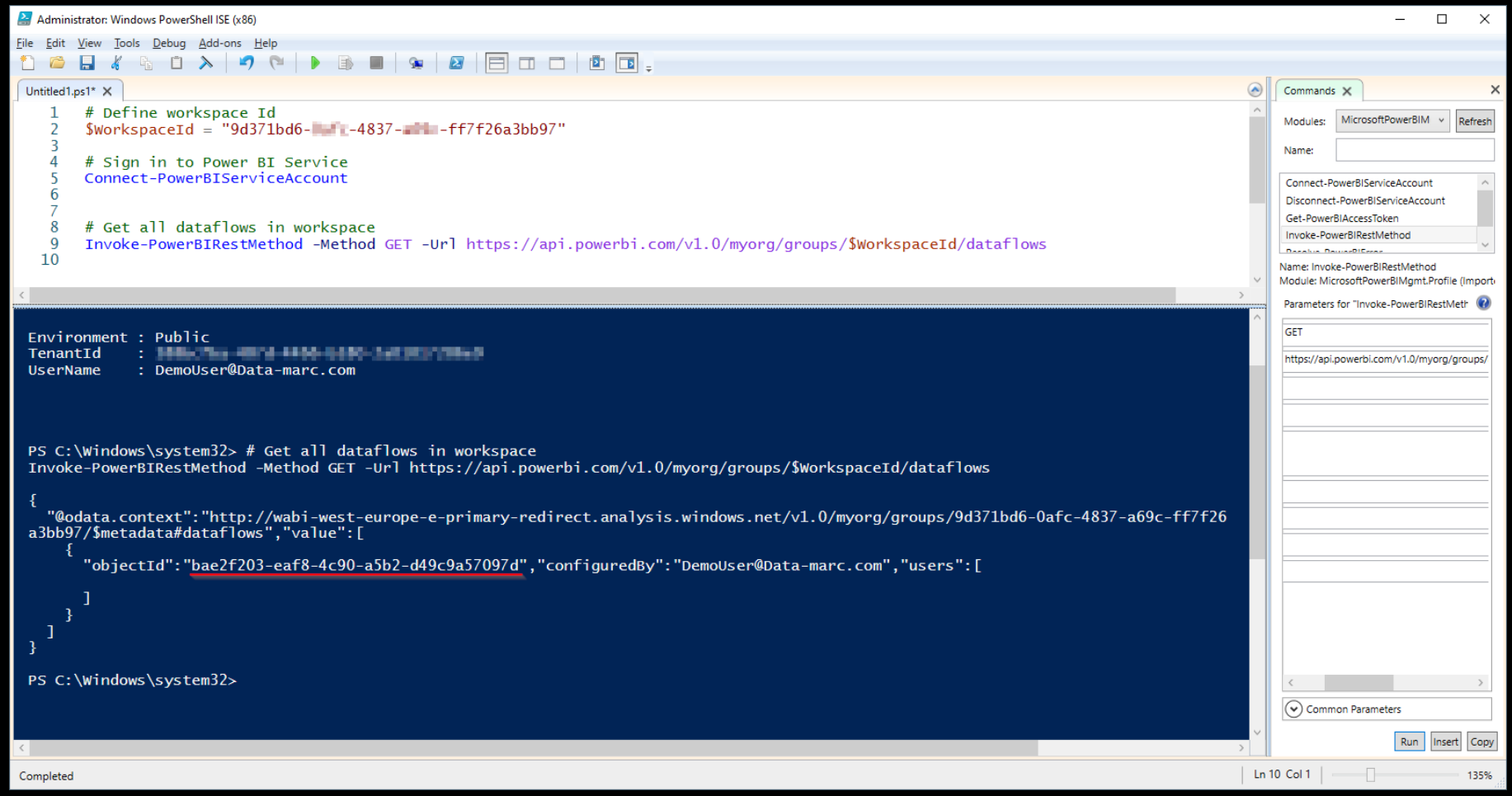
Magic uncovered?

Each table, is first saved as dataflow before being part of the datamart.



Magic uncovered?

Sources of the dataflows listed easily

```
PS C:\Windows\system32> # Get all dataflows in workspace
$ListDataflows = Invoke-PowerBIRestMethod -Method GET -Url https://api.powerbi.com/v1.0/myorg/groups/$WorkspaceId/dataflows | ConvertFrom-Json
$ListDataflows.value

objectId                             configuredBy          users
--------                             ------------          -----
bae2f203-[redacted]-a5b2-d49c9a57097d DemoUser@Data-marc.com {}



PS C:\Windows\system32> # Get Dataflow sources
$DataFlowObjectId = $ListDataflows.value.objectId
Invoke-PowerBIRestMethod -Method GET -Url https://api.powerbi.com/v1.0/myorg/groups/$WorkspaceId/dataflows/$DataFlowObjectId/datasources

{
  "@odata.context":"http://wabi-west-europe-e-primary-redirect.analysis.windows.net/v1.0/myorg/groups/9d371bd6-[redacted]-a69c-ff7f26a3bb97/$meta
data#datasources","value":[
    {
      "datasourceType":"Sql","connectionDetails":{
        "server":"[redacted].database.windows.net"
      },"datasourceId":"02bacc67-4570-4c7c-a801-2d47ae9a209c","gatewayId":"c1d863df-d137-453e-9504-0d1d99268906"
    },{
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      },"datasourceId":"dc69e506-3d08-4f50-ba5f-daf90eb1f700","gatewayId":"c1d863df-d137-453e-9504-0d1d99268906"
    },{
      "datasourceType":"Sql","connectionDetails":{
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      },"datasourceId":"318de039-d12b-48f7-b676-963f2e077a75","gatewayId":"c1d863df-d137-453e-9504-0d1d99268906"
    },{
      "datasourceType":"Sql","connectionDetails":{
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    }
```
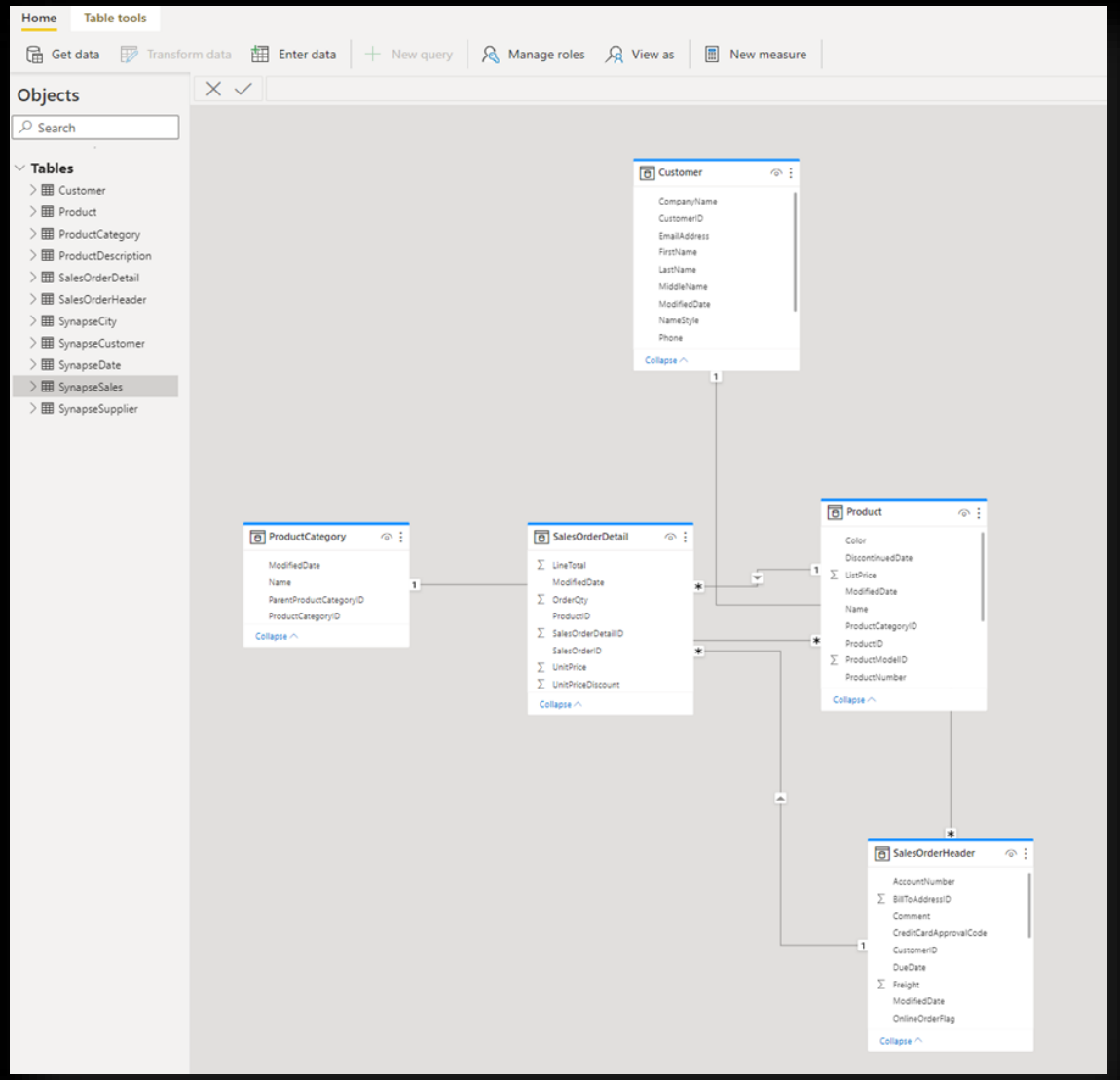

Modeling experience

Modeling experience in the service, which allows you to build new relationships, define measure and more!



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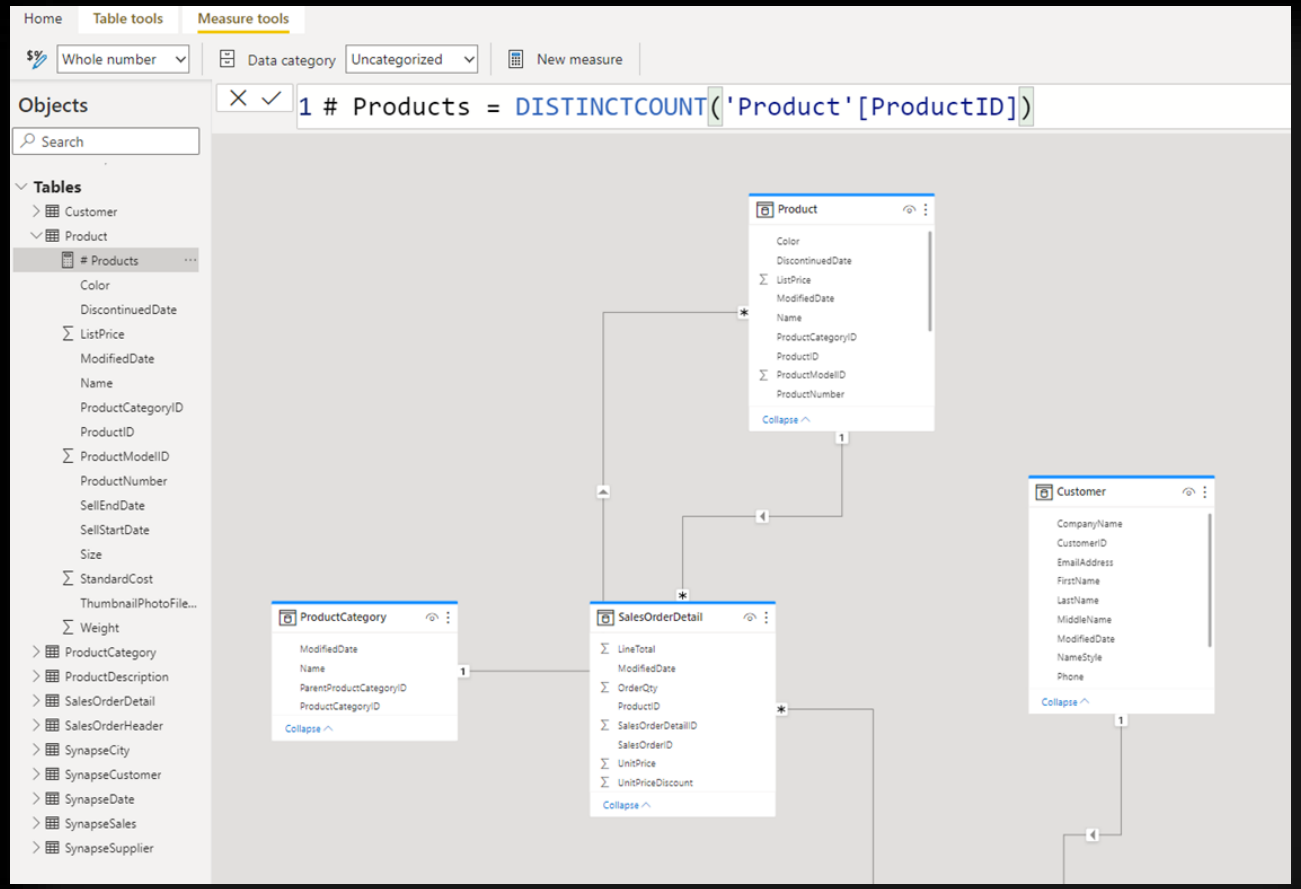
Measures

Datamarts allow you to build measures directly, as part of the modeling experience.

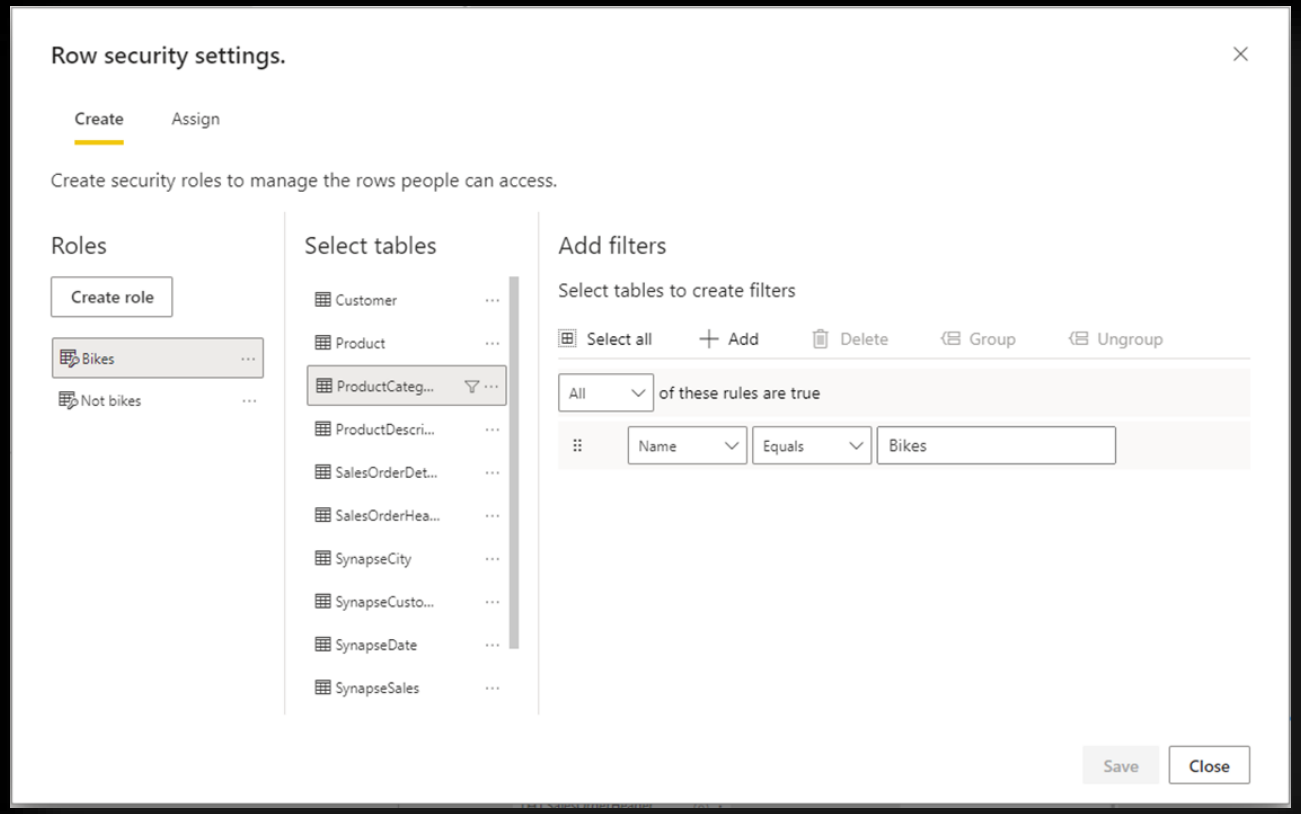
Measures results cannot be displayed inside the datamart.



Security

Simplified experience to setup row level security, without the need to understand DAX.

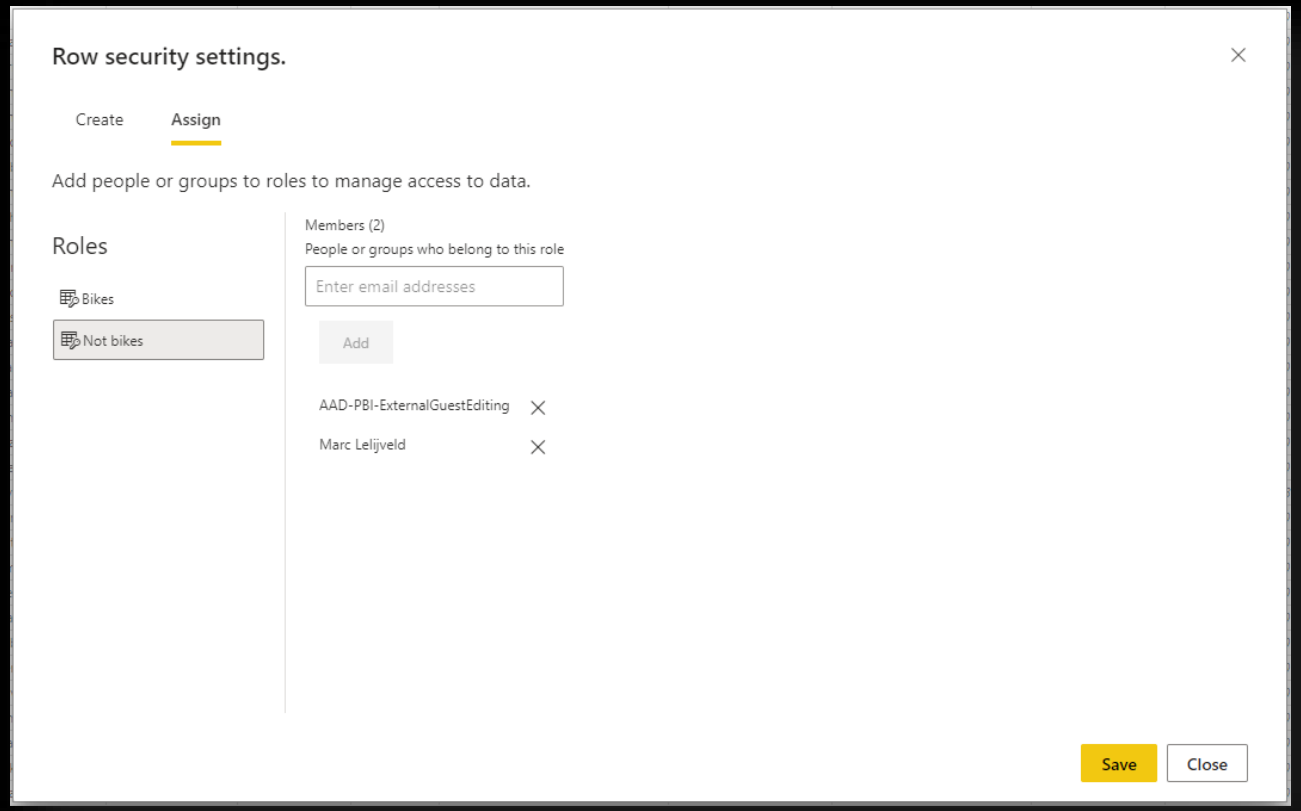
Object level security is not possible (yet?).



Assign users to roles

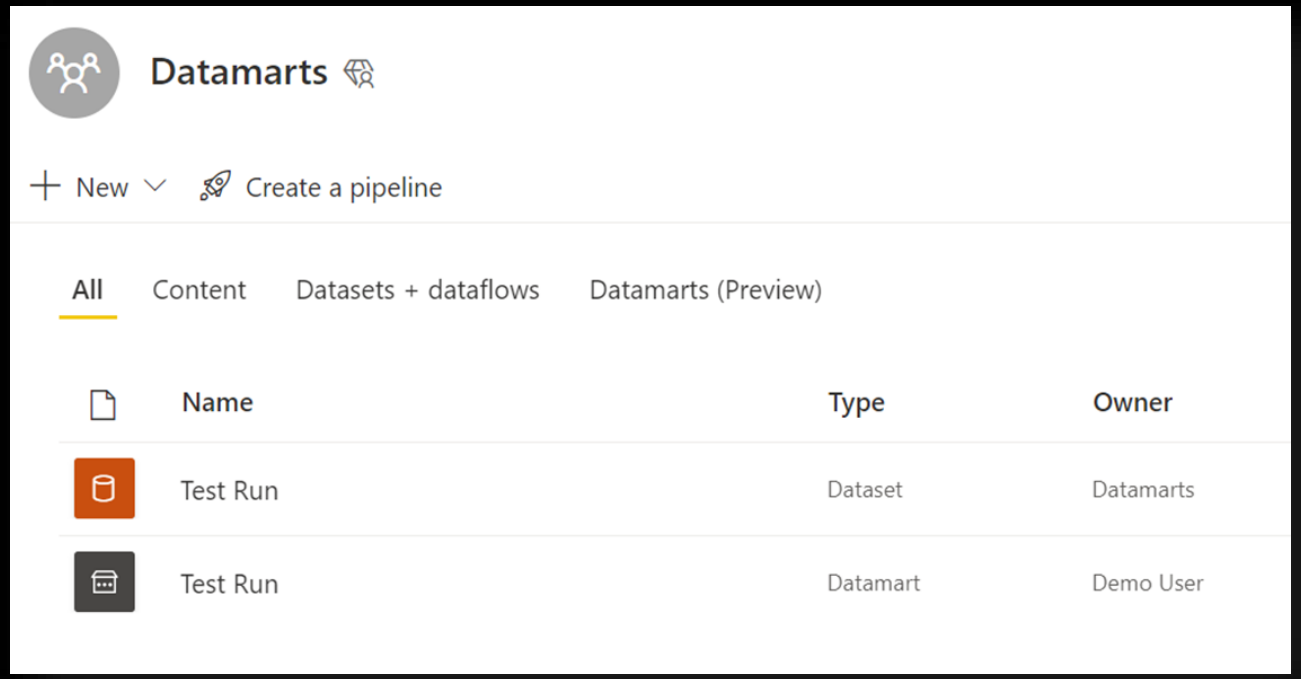
Assign users or groups to roles directly in the service. Even external users can easily be added.

“View As” functionality is available, but test as user to validate RLS is missing.



Auto-generated dataset

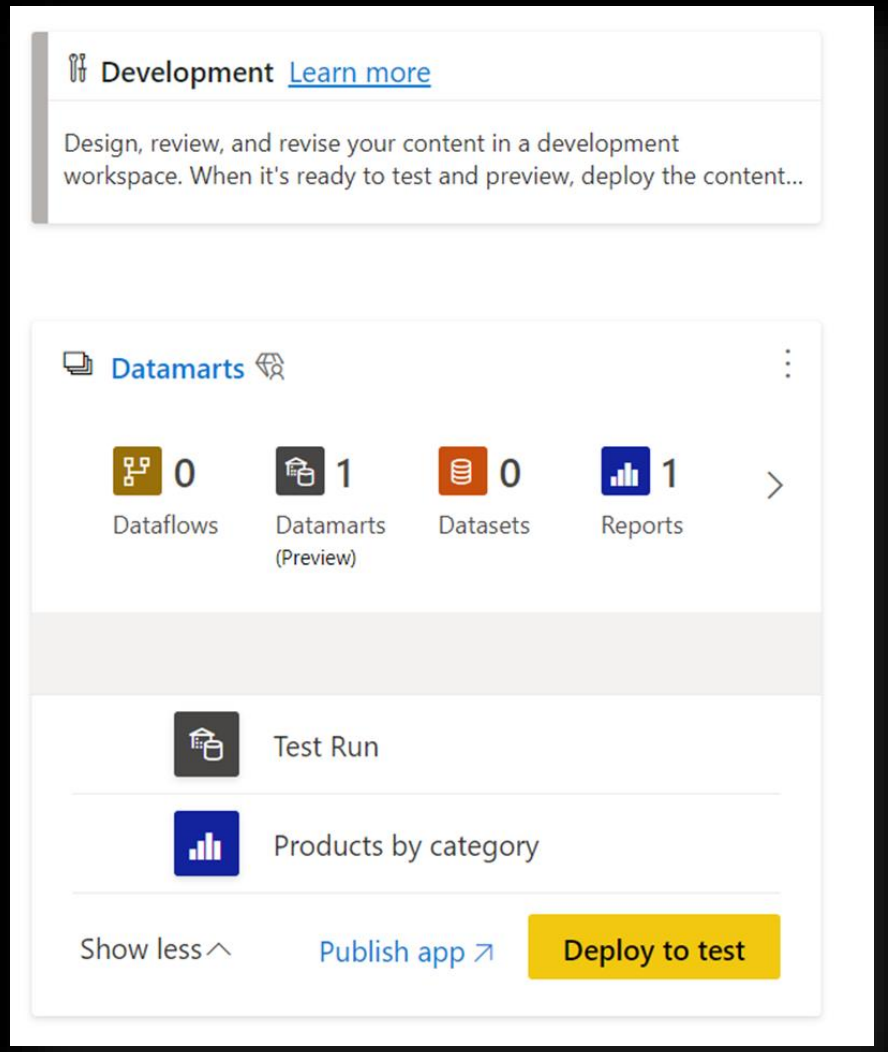
A Power BI dataset is automatically generated in the same workspace, using a DirectQuery connection to your datamart.



ALM for datamarts

Datamarts can be deployed to different stages using Power BI deployment pipelines.

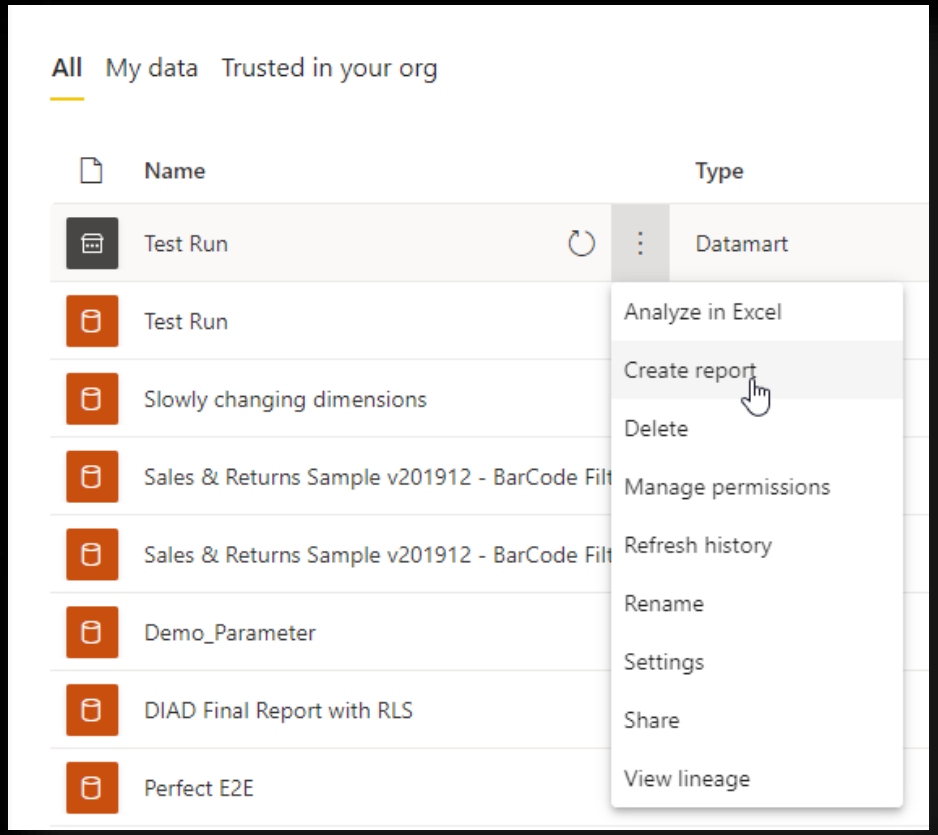
Notice the auto-generated dataset is not visible in the pipeline.

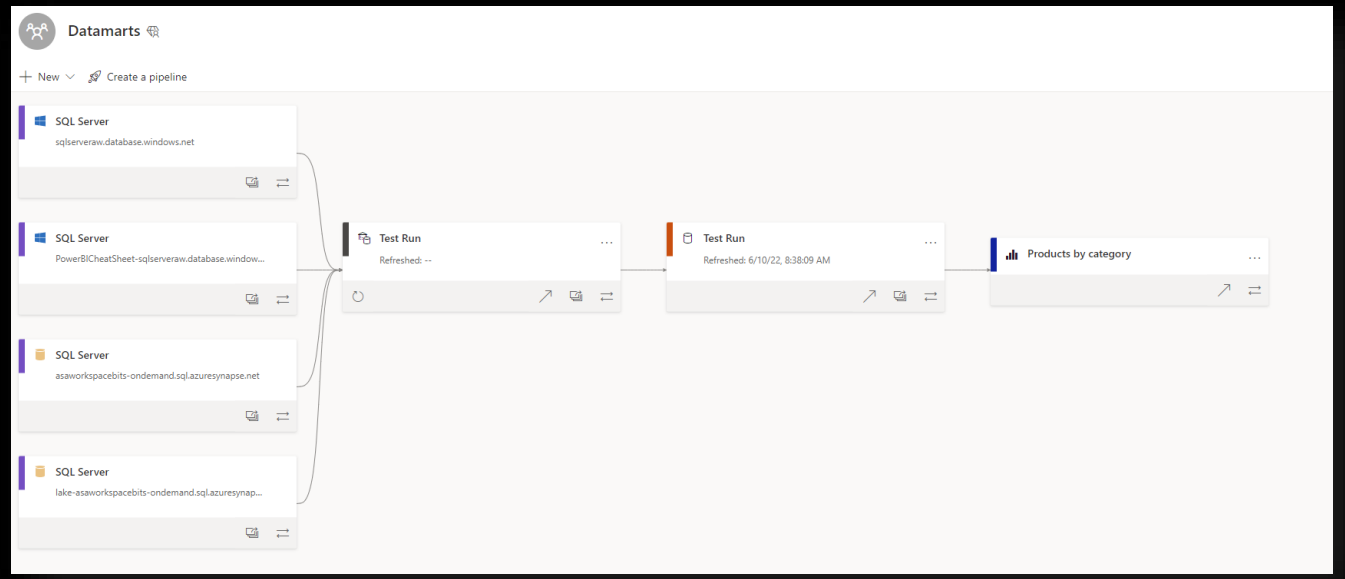


Consuming datamarts

Datamarts in the data hub

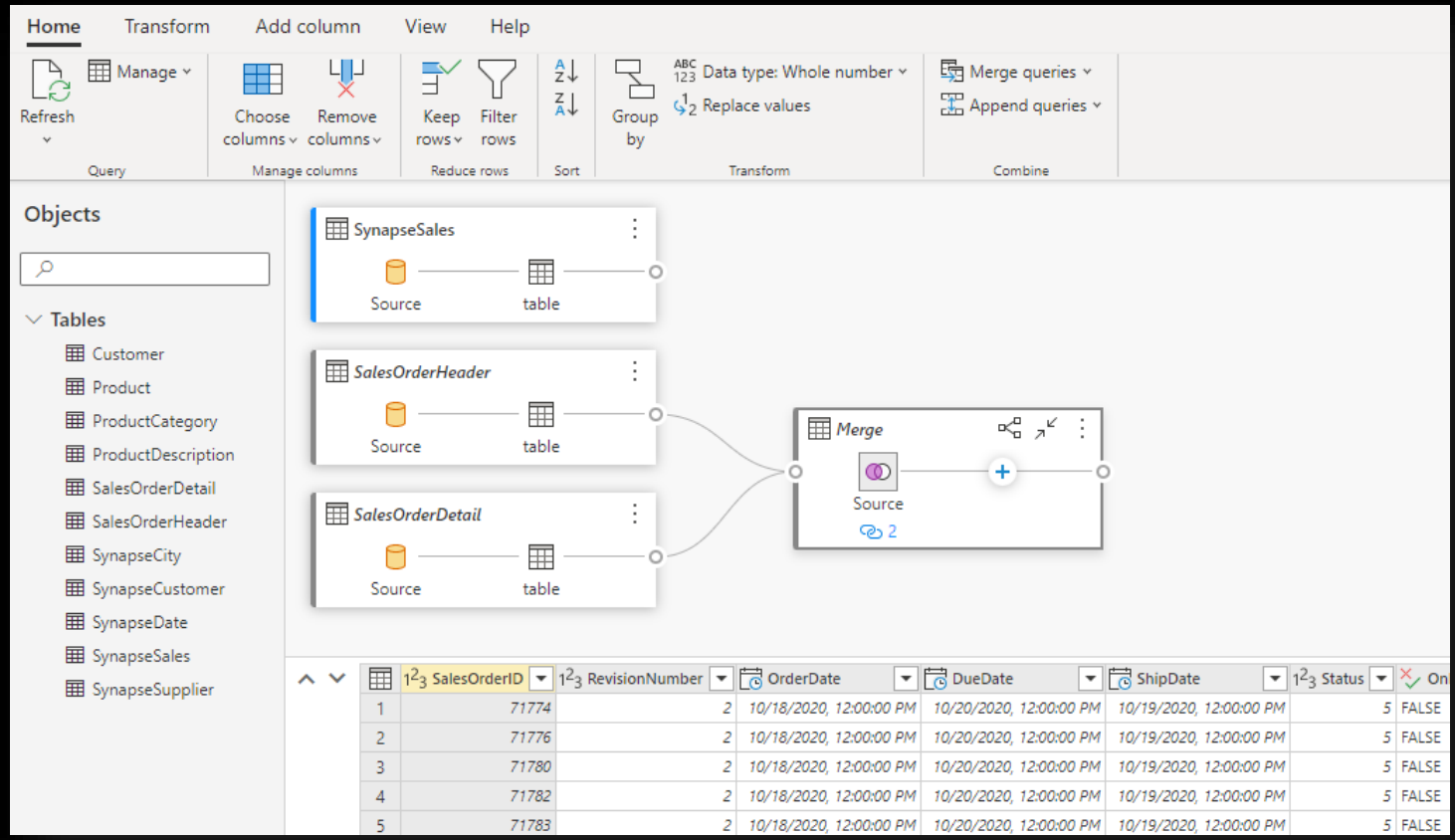
Create new reports on top of a datamart, directly from the data hub in the Power BI Service.





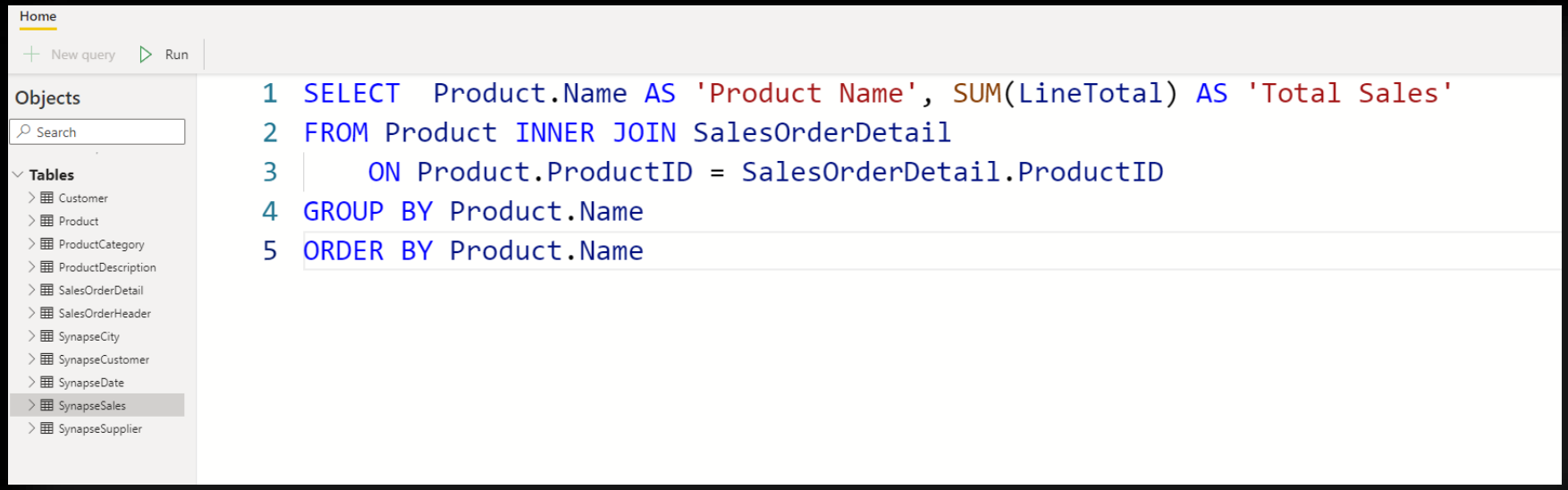
Query experience

Ad-hoc M-queries (PowerQuery) in a visual experience.



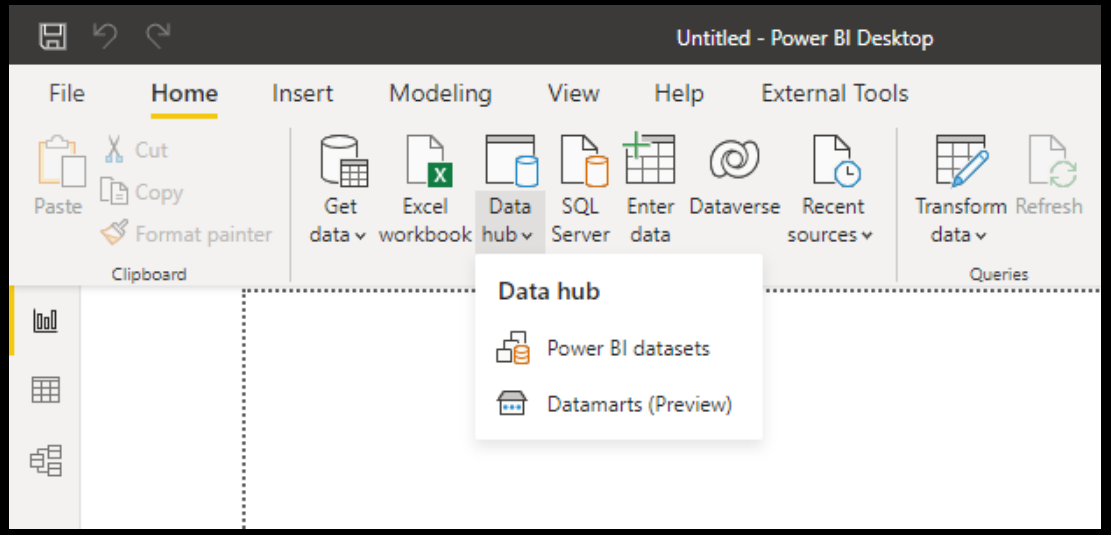
Query experience

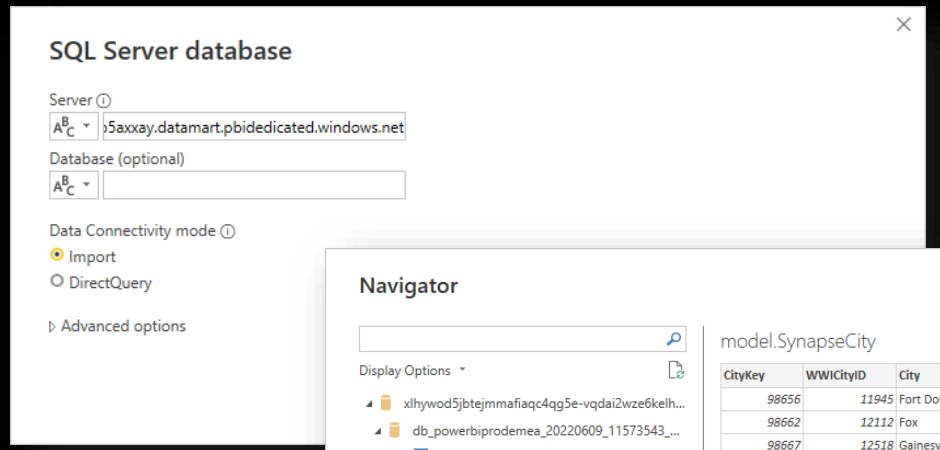
Write on-demand SQL queries in the same datamart interface.

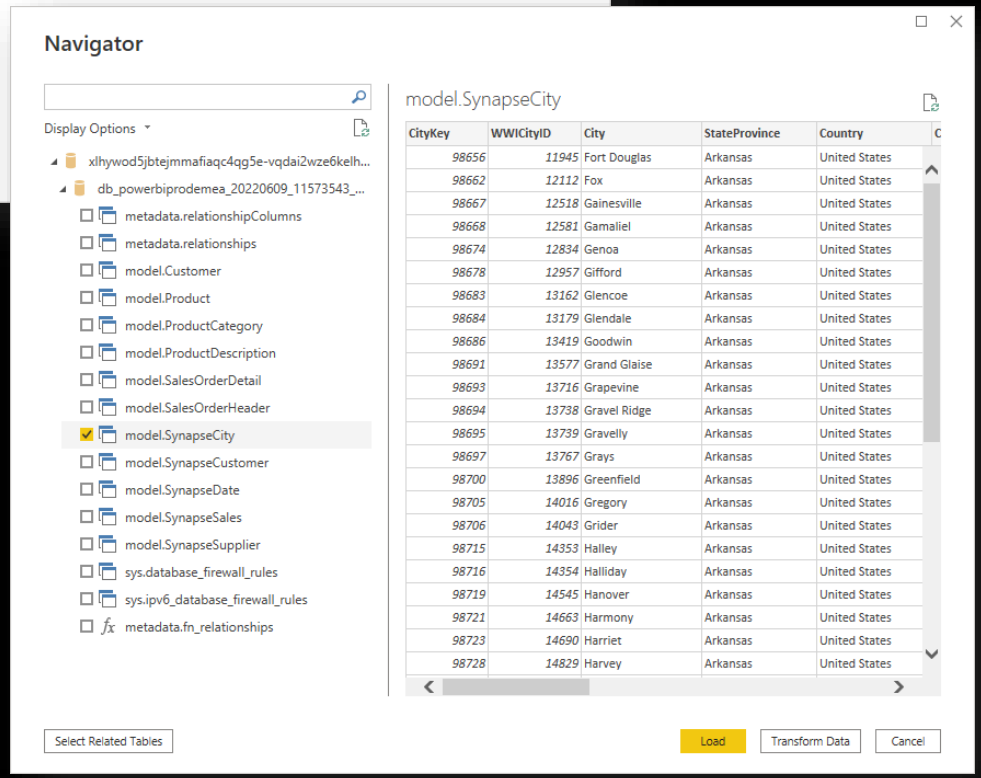


Access datamarts from Power BI Desktop

Access the datamart using the Datamarts connector or just like any other SQL data source.







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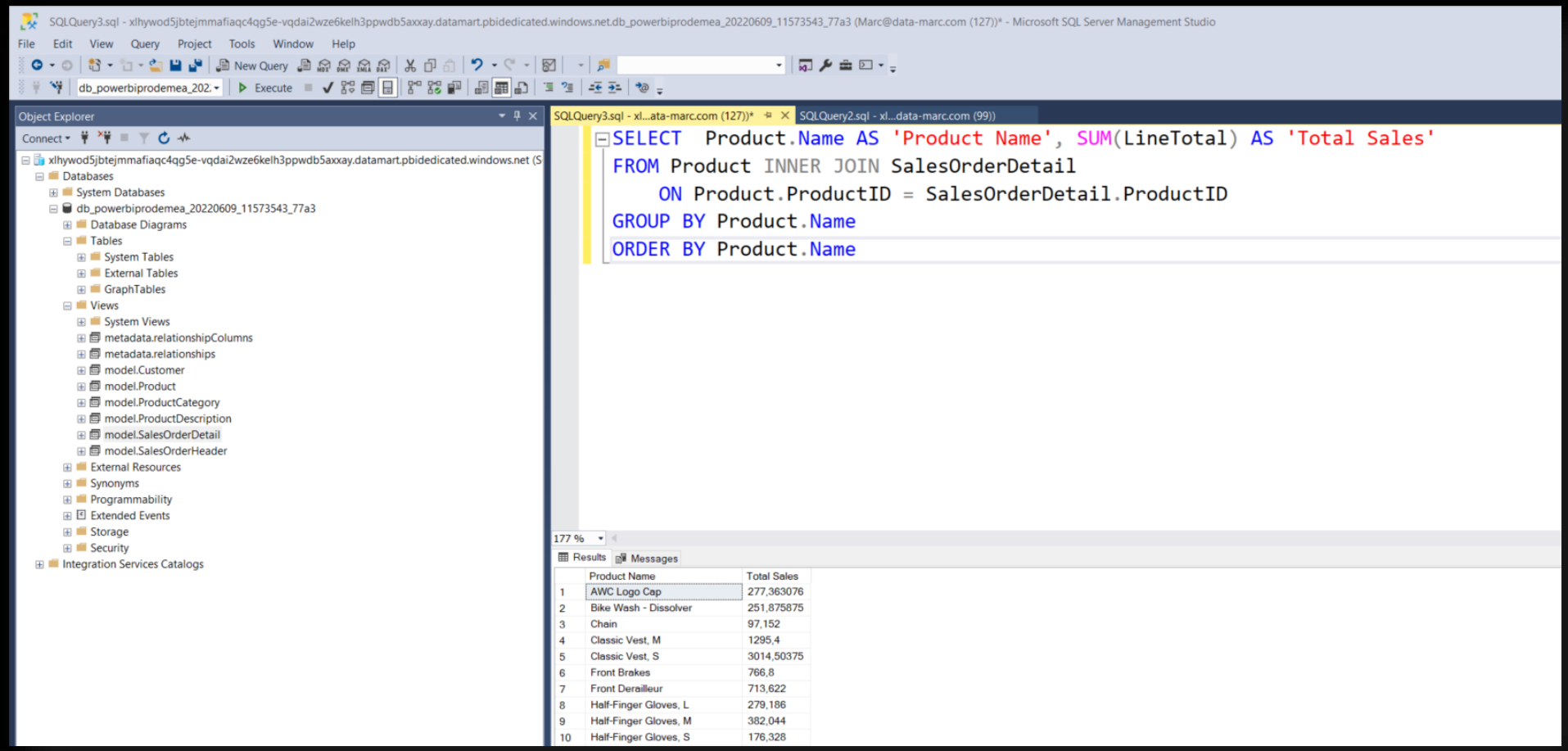
Access datamarts from any other tool

Use tools like SSMS or Azure Data Studio to connect to your datamart.



Let’s build a datamart together!

Open ends

Unclarities and current limitations

Limit of 100GB per datamart (only during preview?)

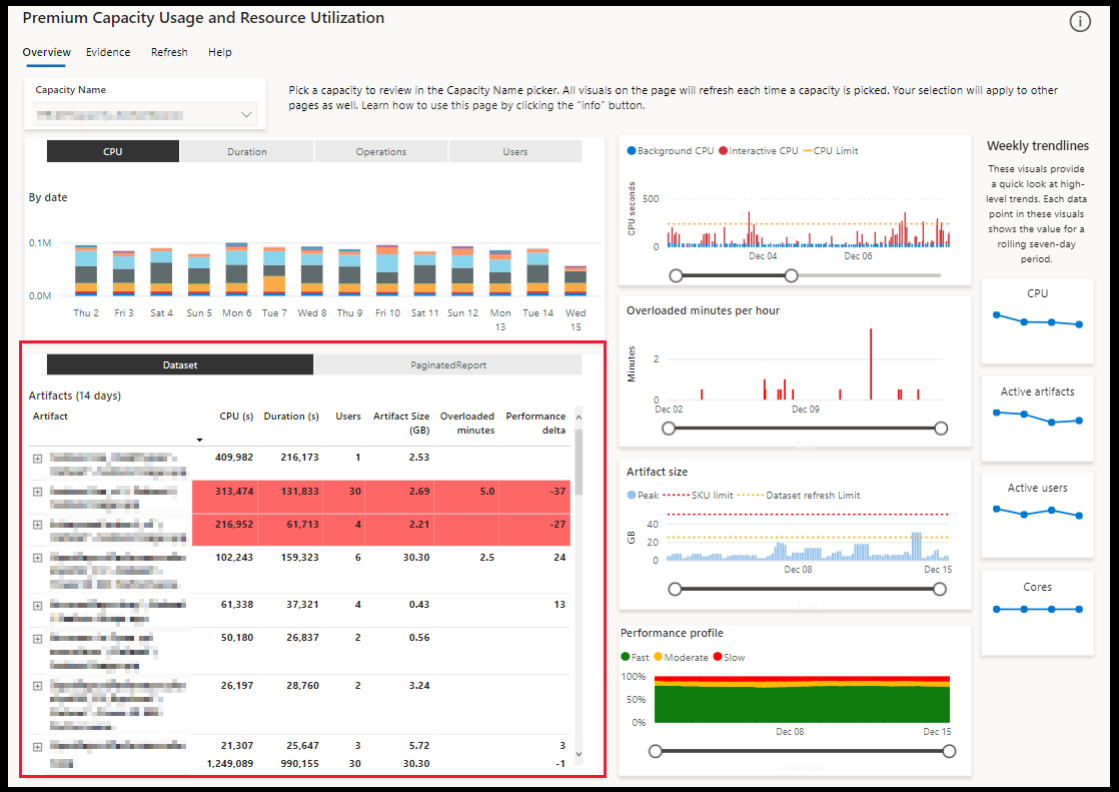
Request ID	Request content	Submit time	Duration	Data processed	Status
995217	select [$Table].[Supplie... More	6/11/22, 8:39:12 AM	14 sec	10.00 MB	Completed
995910	select [$Table].[SaleKey... More	6/11/22, 8:39:09 AM	6 min	163.00 GB	Completed
995143	select [$Table].[CityKey... More	6/11/22, 8:39:09 AM	17 sec	16.00 MB	Completed
995059	select [$Table].[DateKe... More	6/11/22, 8:39:09 AM	16 sec	10.00 MB	Completed
995128	select [$Table].[Custom... More	6/11/22, 8:39:09 AM	17 sec	10.00 MB	Completed

Refresh history

Time	Duration	Status
06/11/2022 08:39 am	15:00:57	Completed

Unclarities and current limitations

Datamarts will contribute to Premium capacity utilization. Impact on the capacity is still unclear. Processing of the datamart and querying the datamart is not visible in the metrics right now and free during preview.



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Wrap up

Datamarts can be considered as **dataflows on steroids**

Flexibility for end users in query capabilities with SQL, M and DAX

Existing **modeling capabilities** made available in the service

Spin up Datamarts to easily **share secured data artifacts** with others

It is still **preview**, keep that in mind while building solutions

Thanks for attending!

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