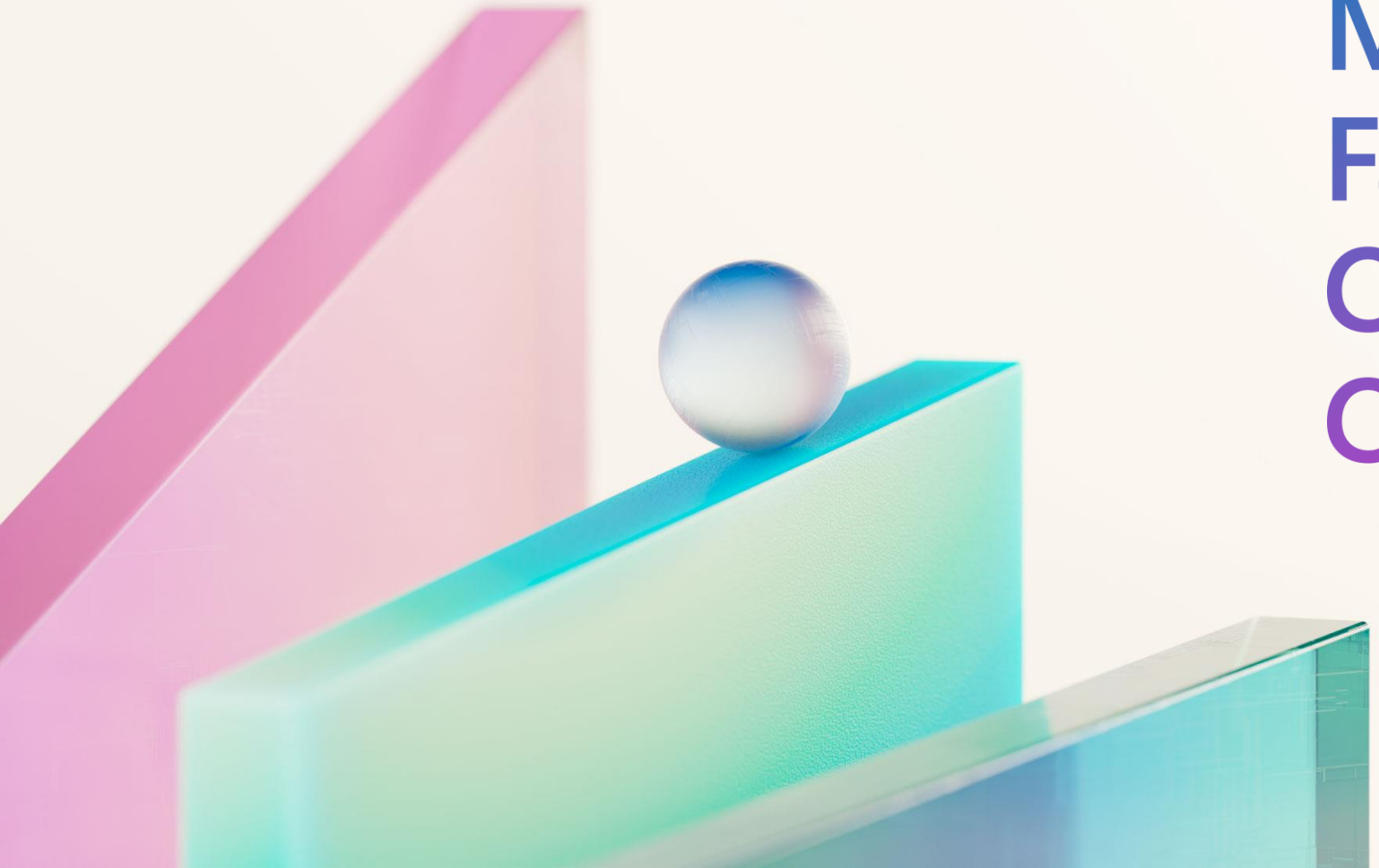
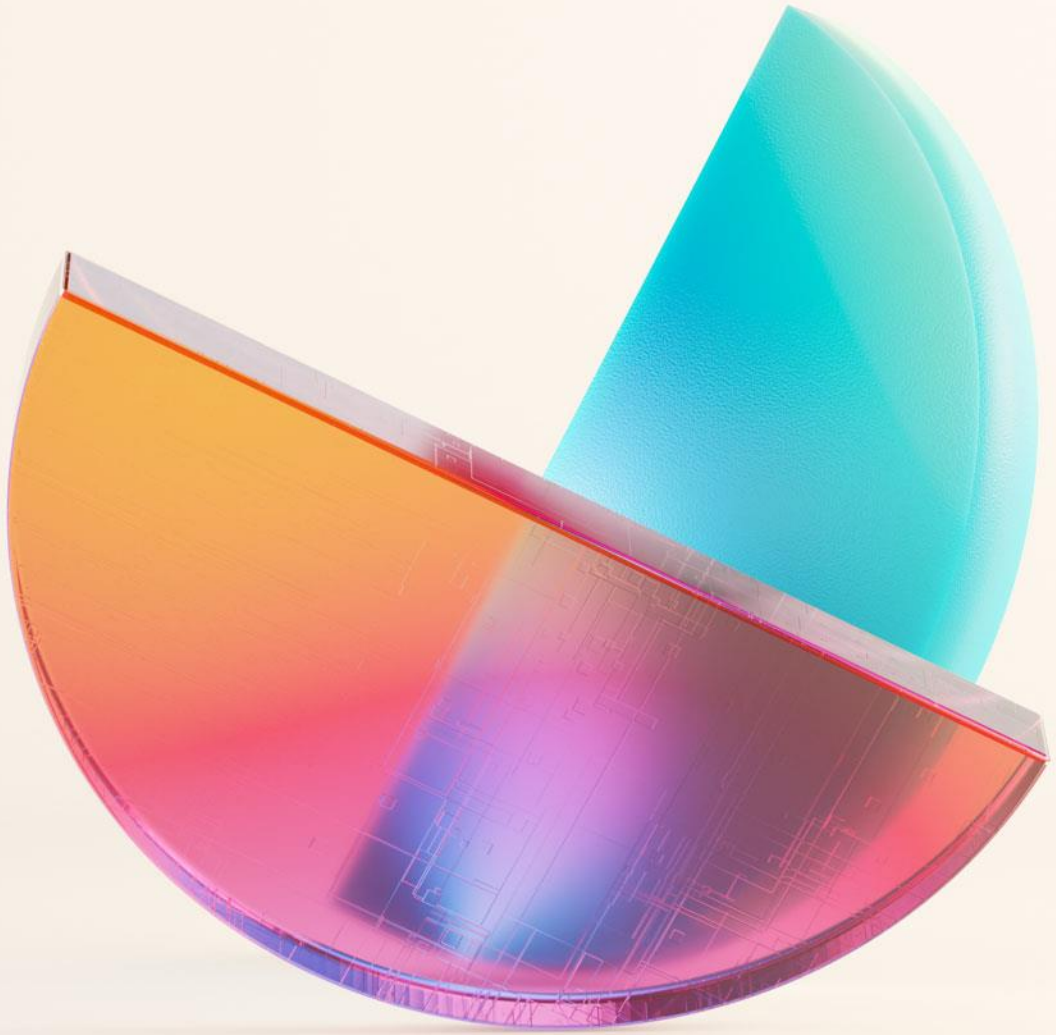
Microsoft



Microsoft Fabric Community Conference

Microsoft

Microsoft Fabric
Community Conference



Take your Power BI solutions to the next level with Microsoft Fabric

Marc Lelijveld & Pawel Potasinski

Marc Lelijveld

Technical Evangelist | Solution Architect
Macaw Netherlands

Microsoft® Most Valuable Professional

@MarcLelijveld

linkedin.com/in/MarcLelijveld

Data-Marc.com

FAVORITE STUFF:

Pawel Potasinski

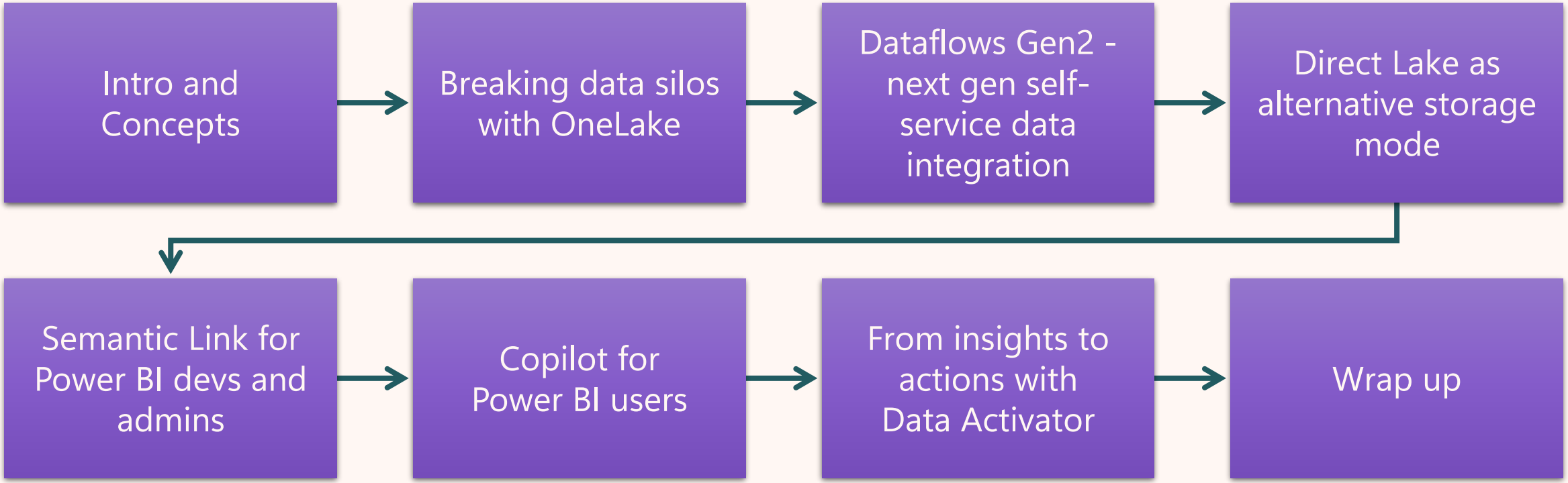
Chief Technology Officer
InfiniteDATA Services

@PawelPotasinski

linkedin.com/in/PawelPotasinski

FAVORITE STUFF:

Agenda


Intro and Concepts
Breaking data silos with OneLake
Dataflows Gen2 - next gen self-service data integration
Direct Lake as alternative storage mode
Semantic Link for Power BI devs and admins
Copilot for Power BI users
From insights to actions with Data Activator
Wrap up

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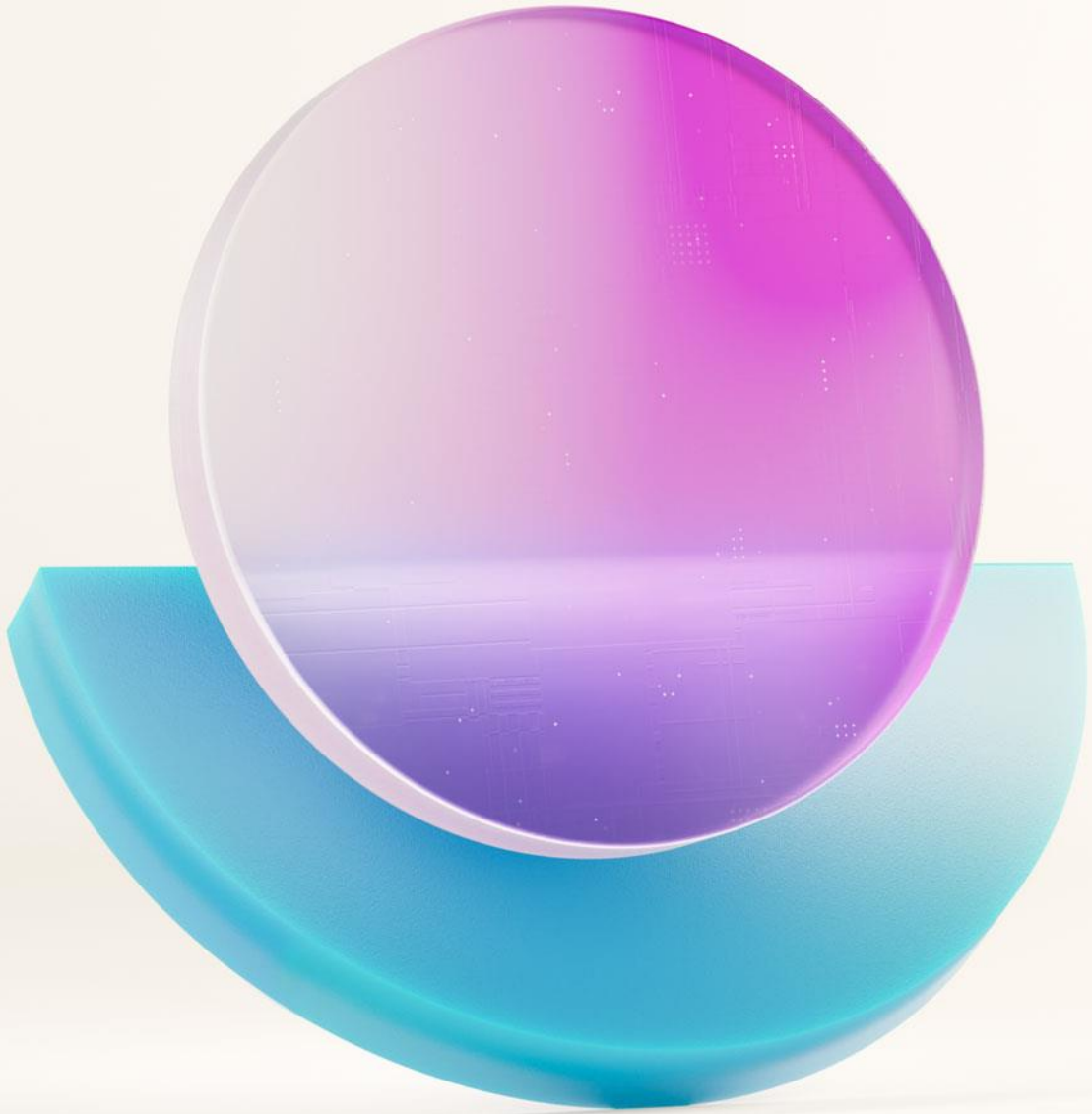


Intro & Concepts

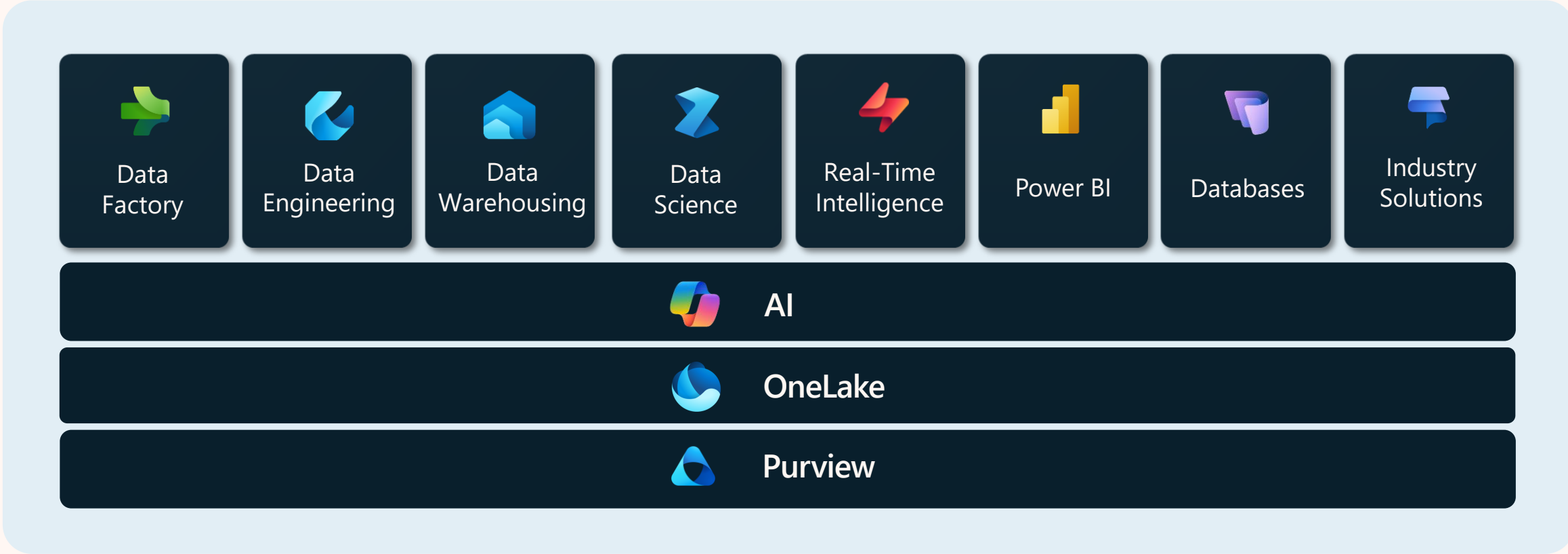
Power BI personas

Citizen Developer
(Business User)

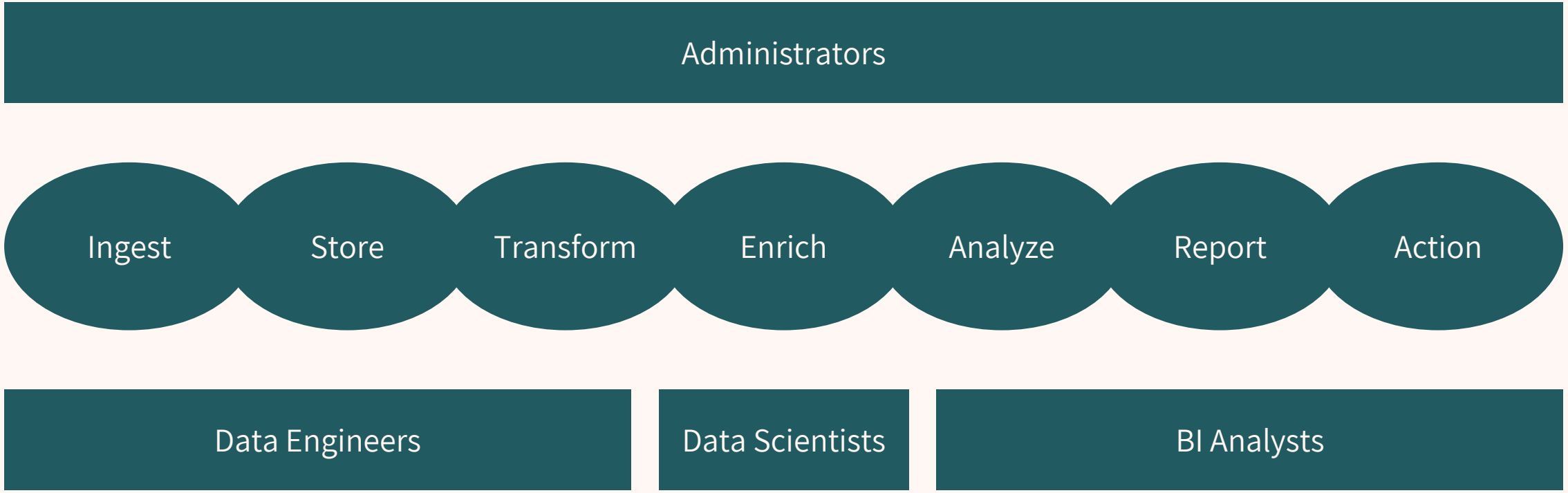
Power BI Developer

Power BI Administrator

What is Fabric for Power BI people?



The flow of work



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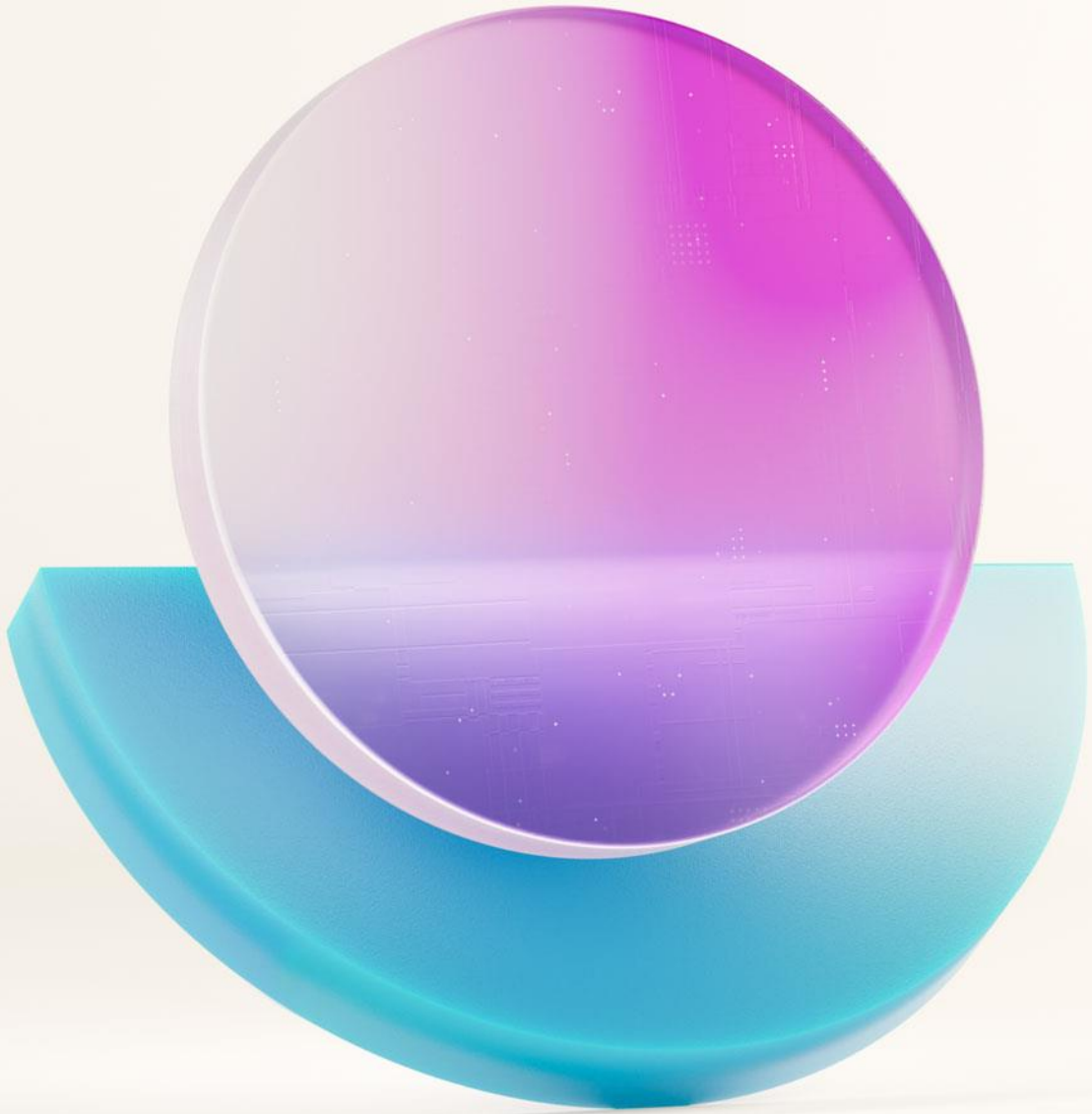
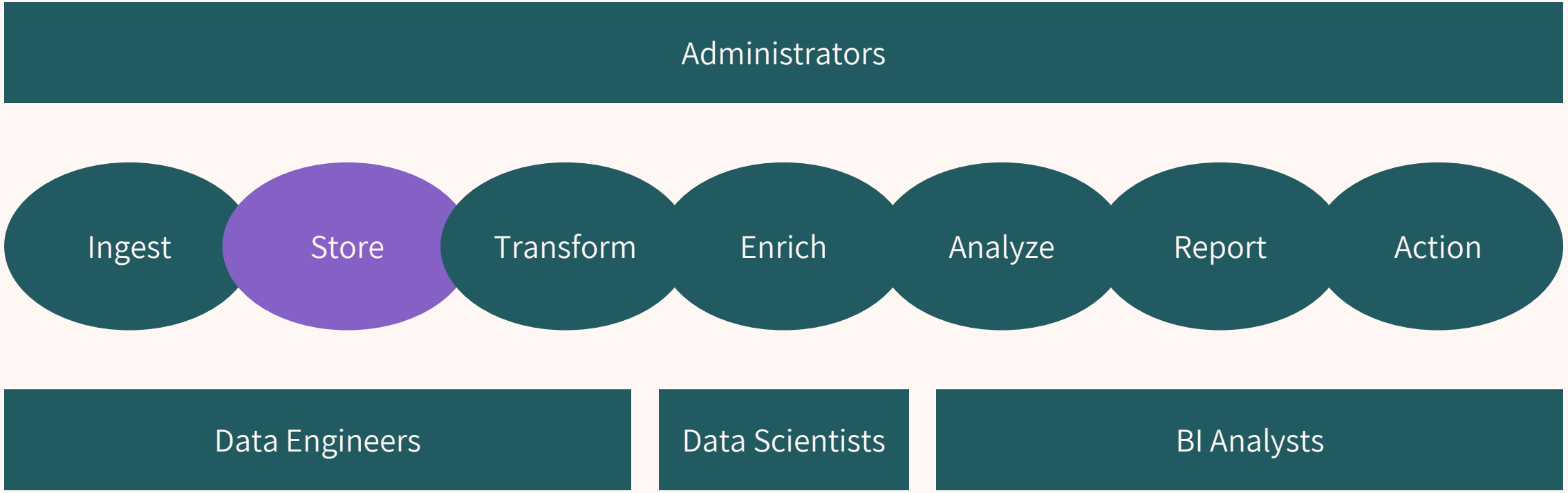
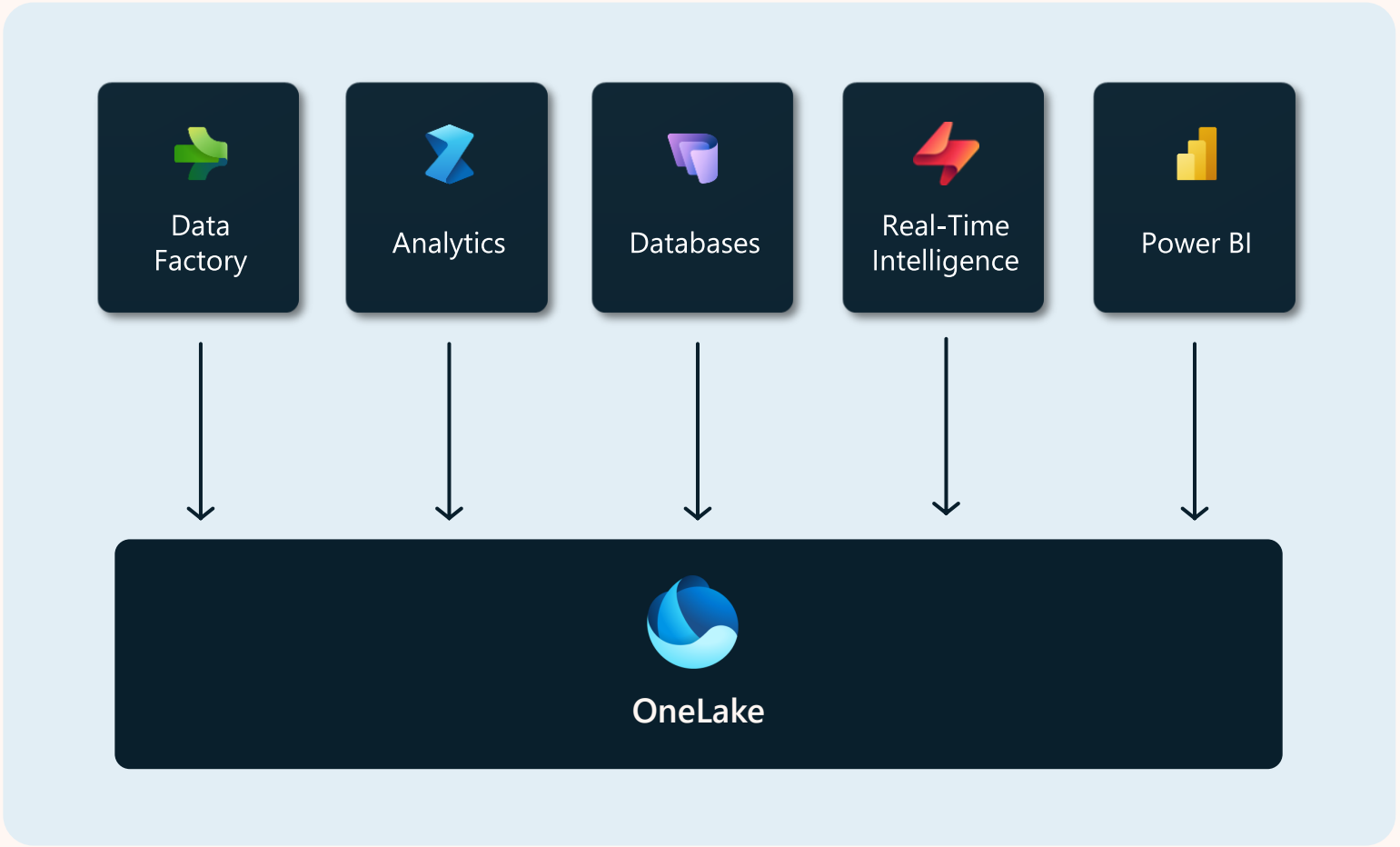


Breaking data silos with OneLake

Positioning of OneLake



OneLake is the OneDrive for data



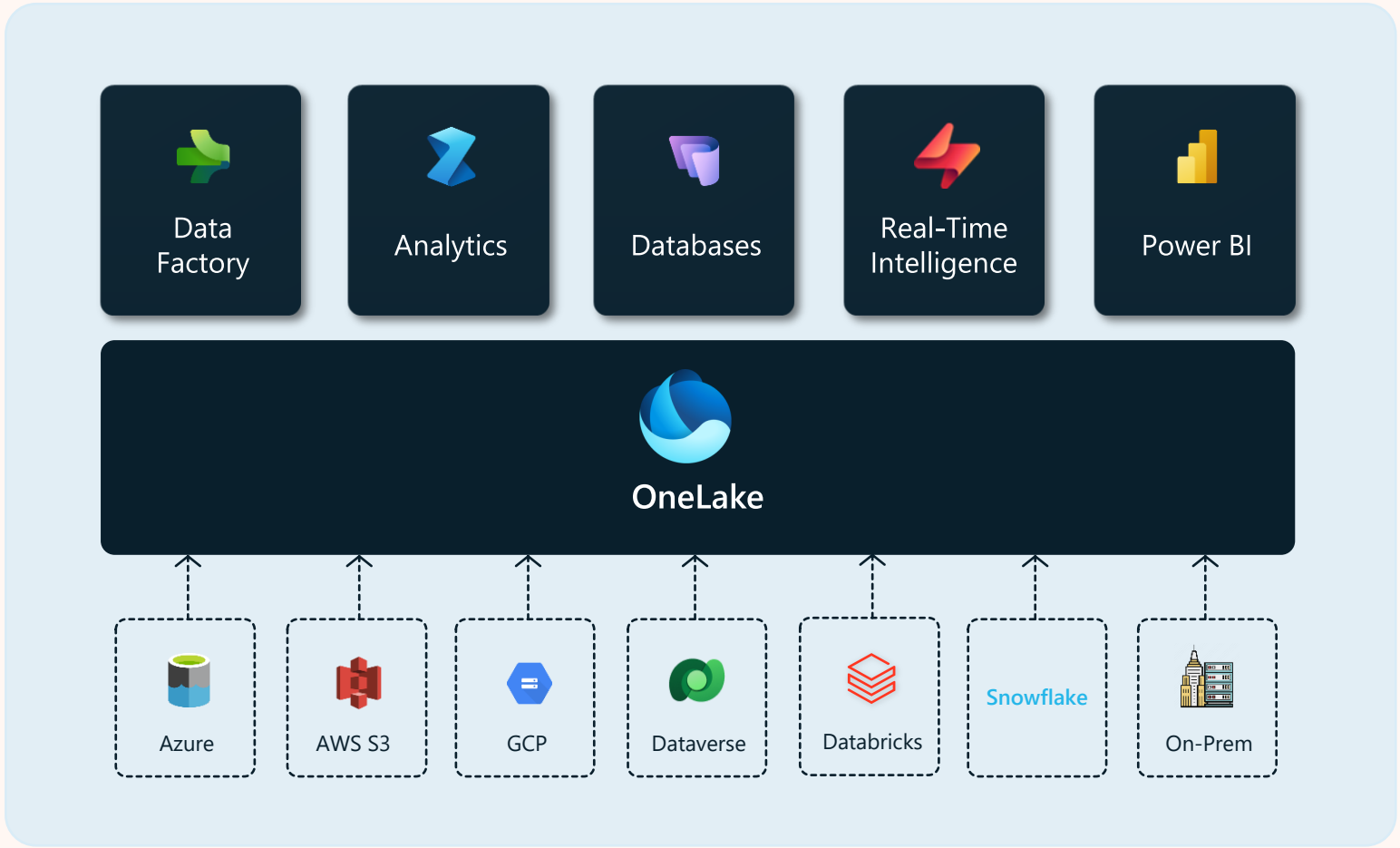
Single SaaS lake for the whole organization

Single open format used by all workloads to store and query data

Automatically indexed for discovery, MIP labels, lineage, PII scans, sharing, governance and compliance

Unifying data in OneLake

Cross-cloud shortcuts & mirroring



First **multi-cloud** SaaS data lake

Shortcuts for existing data **cross clouds and on-premises**

Mirroring to add **whole databases** into the OneLake data estate

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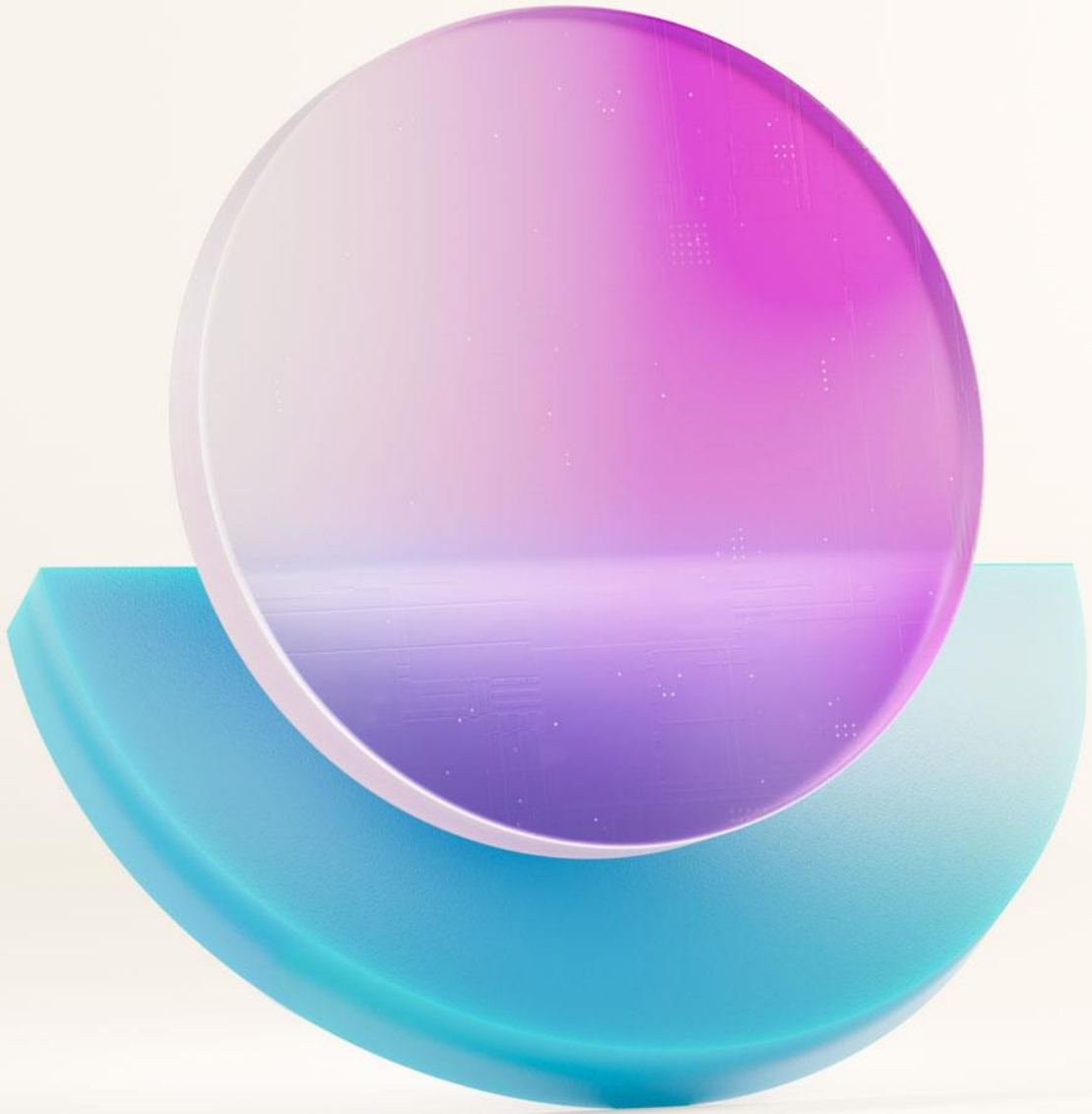

DEMO

OneLake

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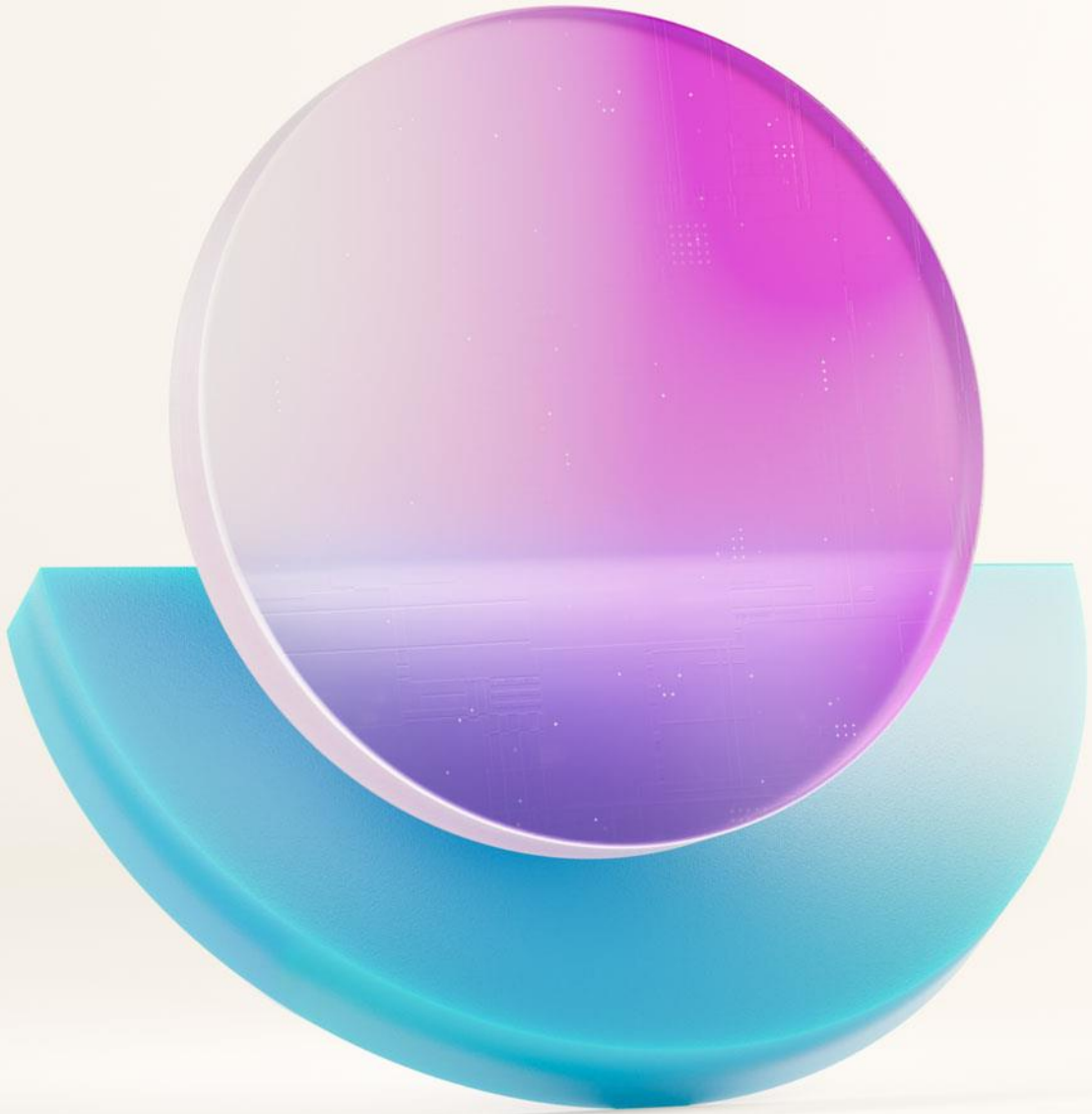
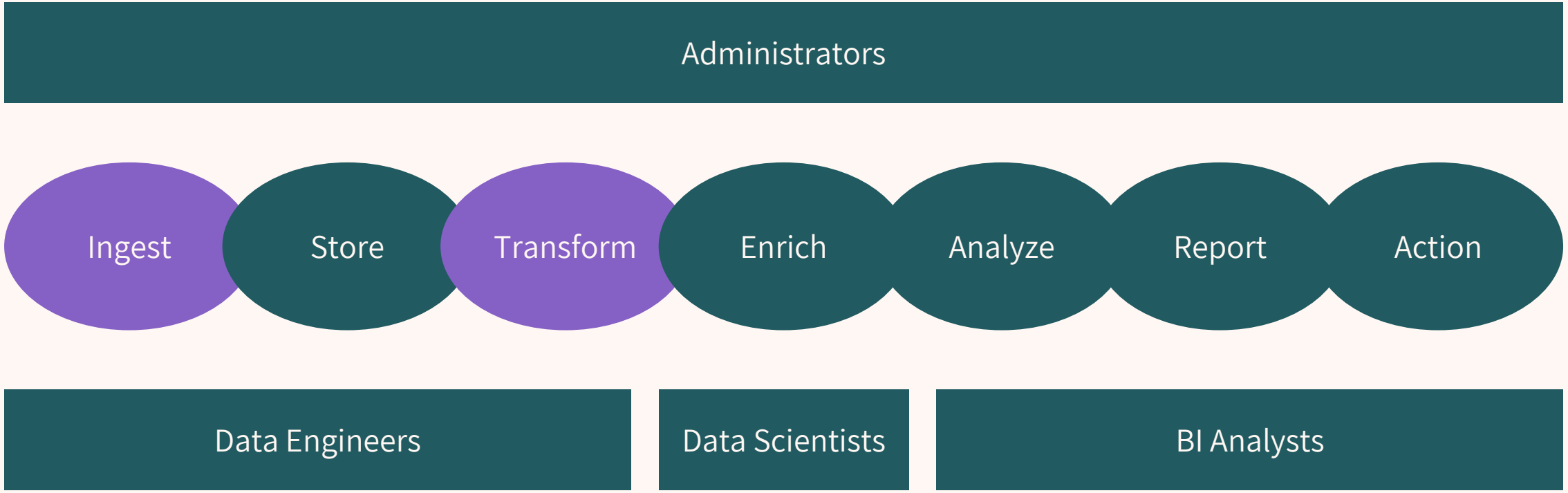


Dataflows Gen2 - next gen self-service data integration

Positioning of Dataflows



Ingest data - when to use which option?

Pipeline

Simple copying.

Minor data type adjustments possible.

No code.

Dataflow

Data transformations possible.
Low code, use PowerQuery interface.

Notebook

Data transformations possible.
Use code.

Shortcut

No data transformations.
Limited connectors available.
No data duplication.

Mirroring

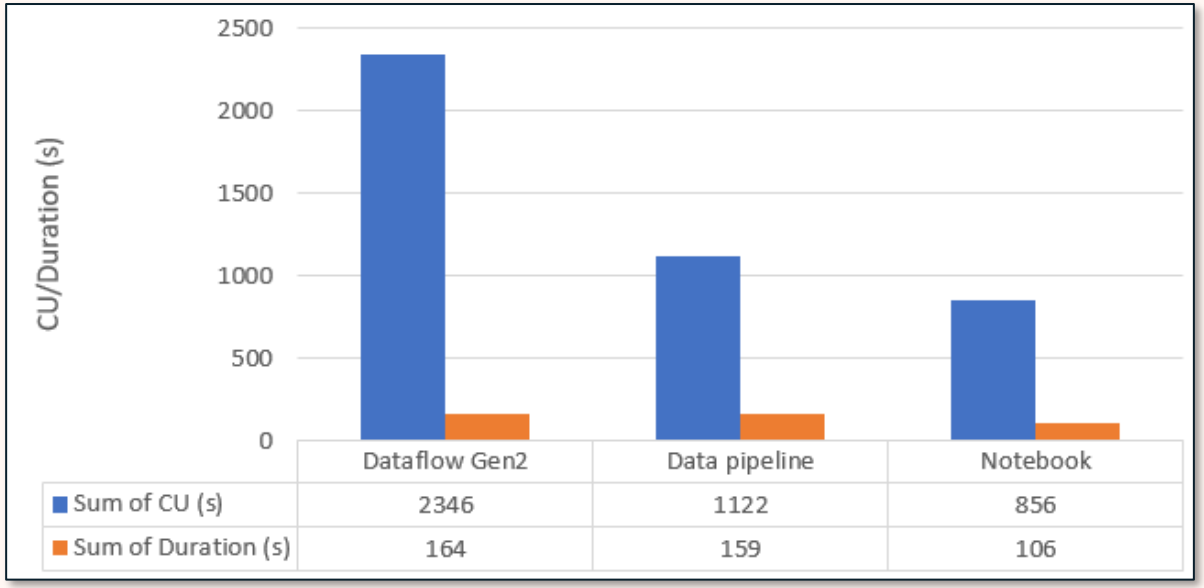
No data transformations.
Limited connectors available (custom extensions possible).
Data duplication.

Dataflows Gen2 (vs Gen1)

- ✓ Data destinations (lakehouse, warehouse, SQL database, …)
- ✓ Can be orchestrated using data pipelines
- ✓ High-scale compute
- ✓ Shorter authoring path
- ✓ AutoSave, save as draft and background publishing
- ✓ New refresh history and monitoring
- ✓ Incremental refresh
- ✗ DirectQuery via Dataflows connector
- ✗ AI insights support

Dataflows Gen2 – the price of convenience

- More CU comsumption due to complex architecture
- Less performance optimization knobs
- Example: FT SKU, loading 2 parquet files (~200MB) into a lakehouse



	Dataflow Gen2	Data pipeline	Notebook
Sum of CU (s)	2346	1122	856
Sum of Duration (s)	164	159	106

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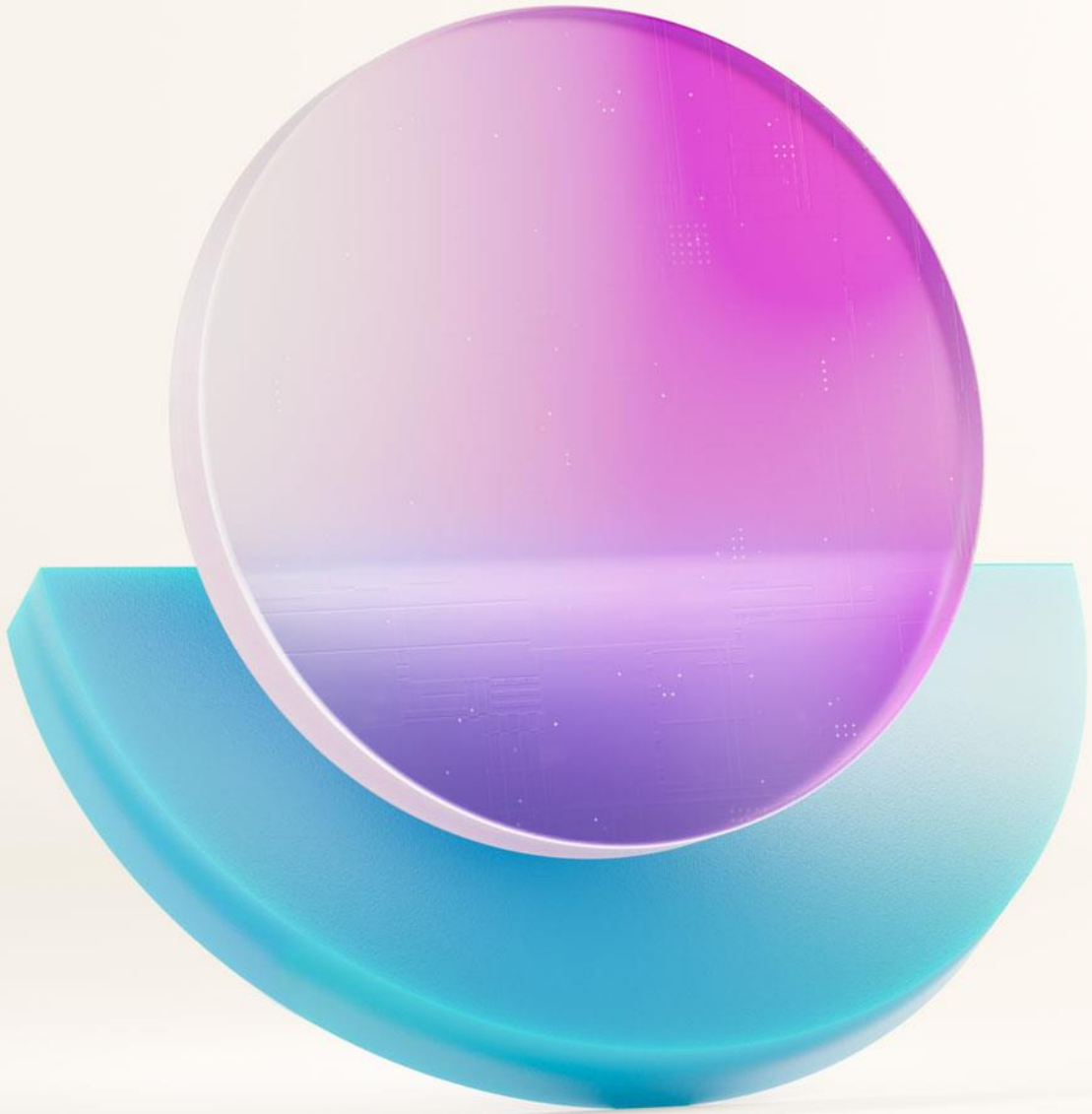
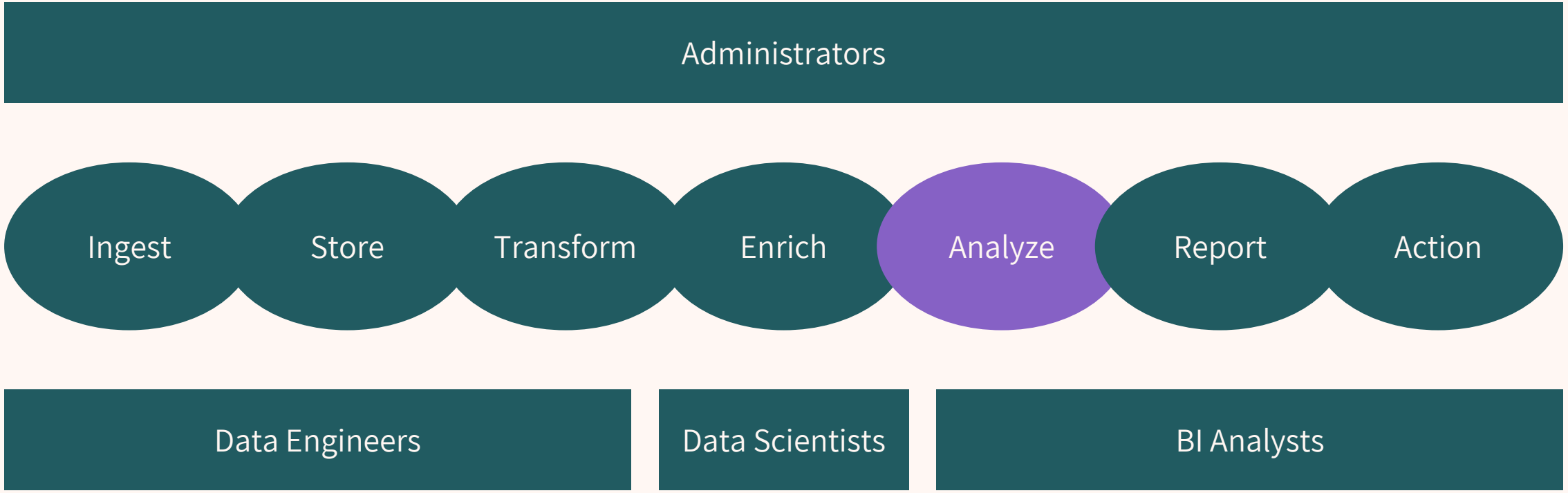
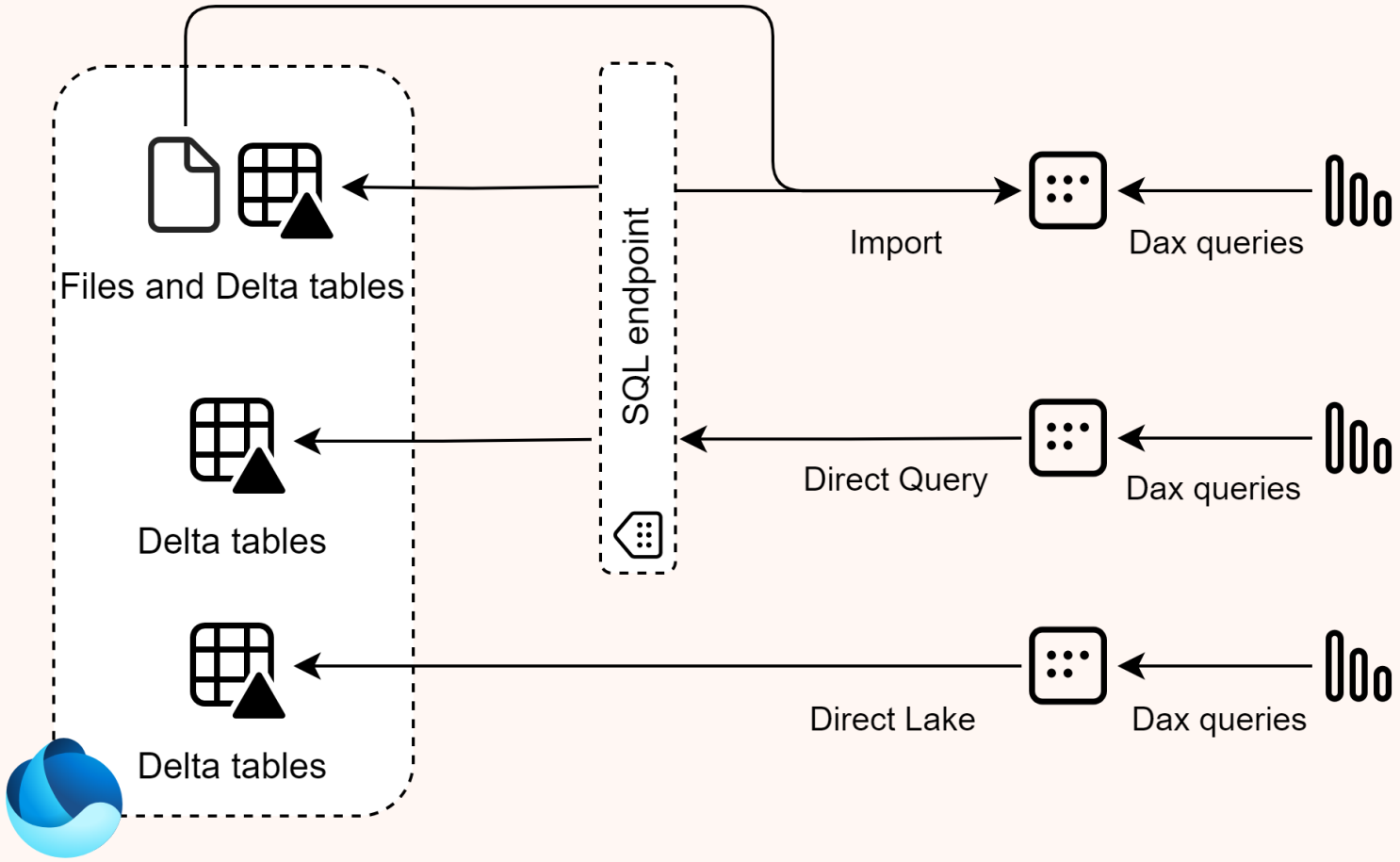


Direct Lake as alternative storage mode

Positioning of Direct Lake capability



Introducing Direct Lake



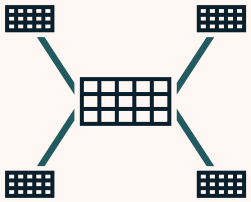
Latent & duplicative but fast

Slow, but real time

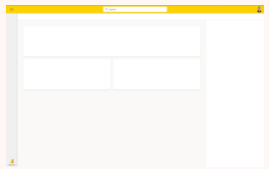
Considered being
Best of both worlds

Direct Lake overview

No Power Query or other data transformation options

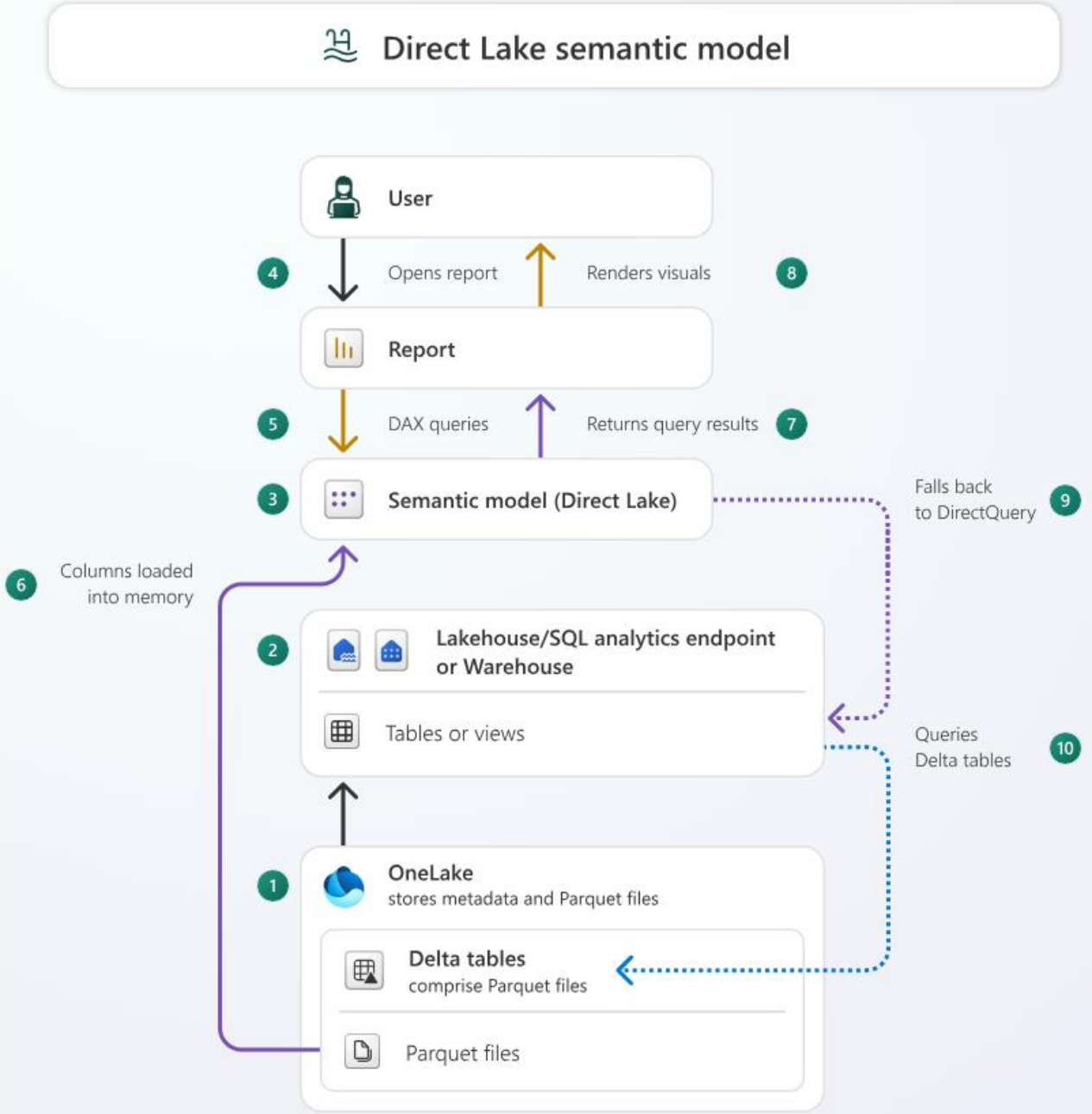


General best practice to have a star schema still applies



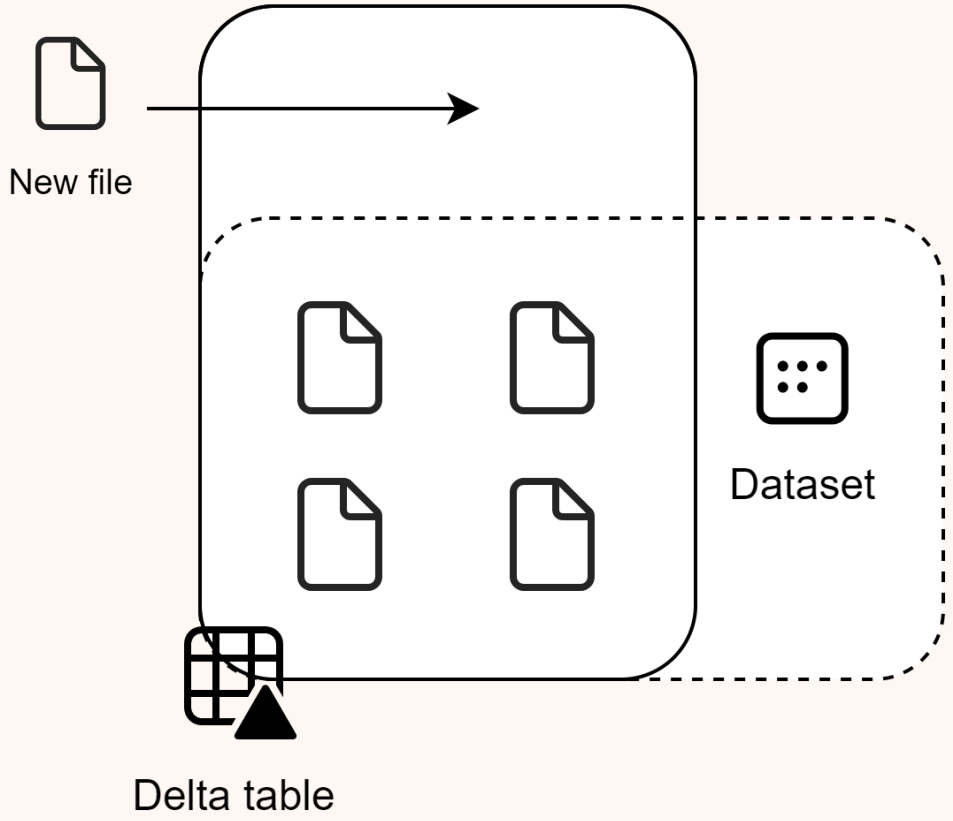
Web (browser) experience only to develop new data models

You can edit from Desktop –desktop acts like a browser

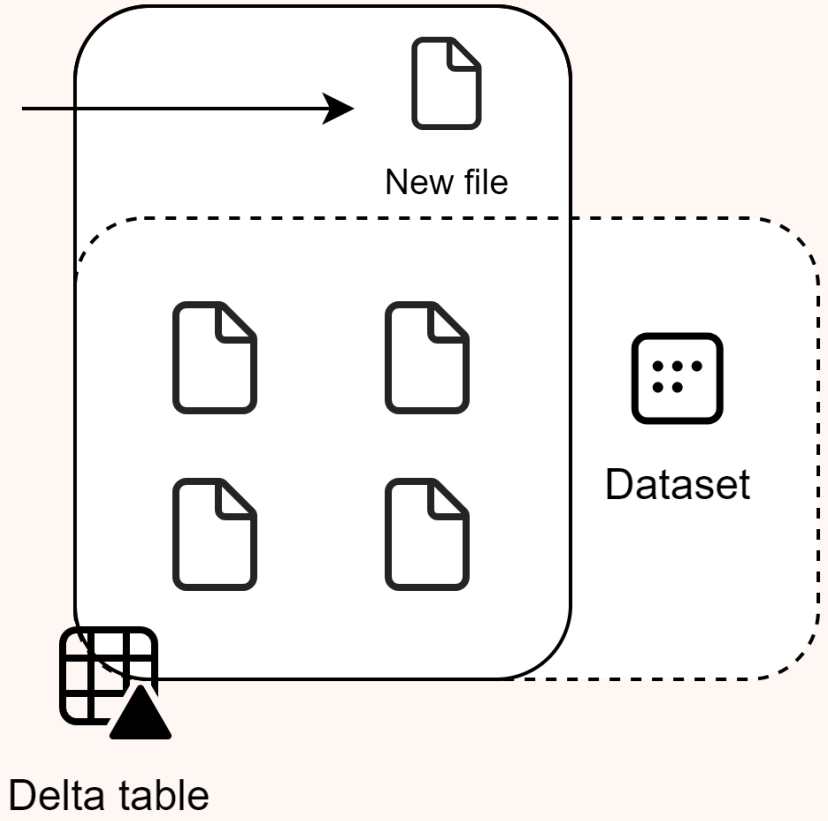


Direct Lake is only applicable to Fabric

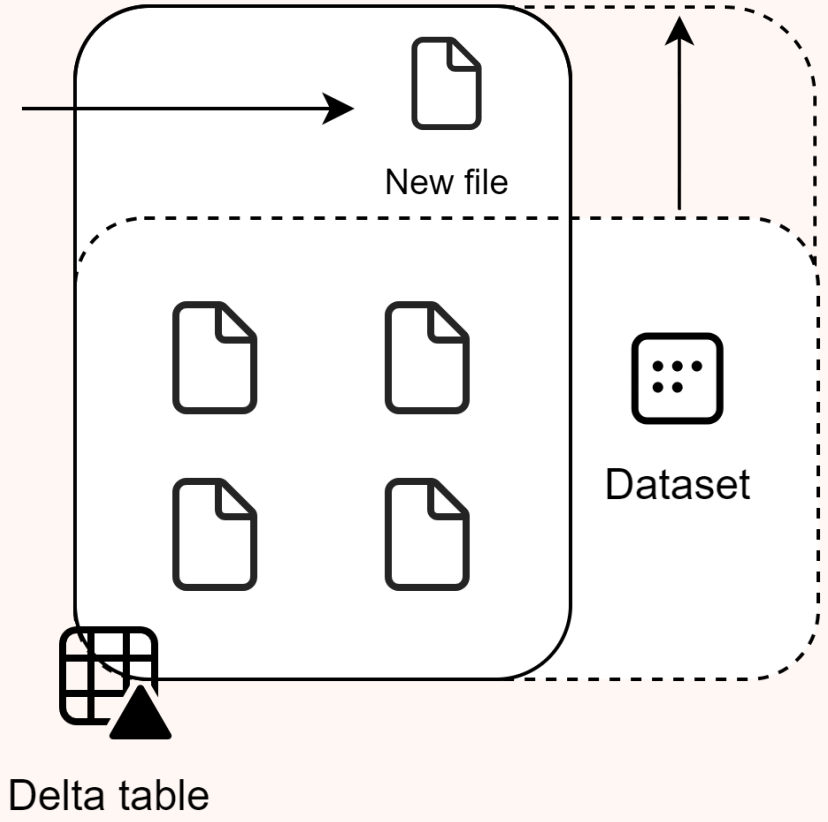
Framing



Framing

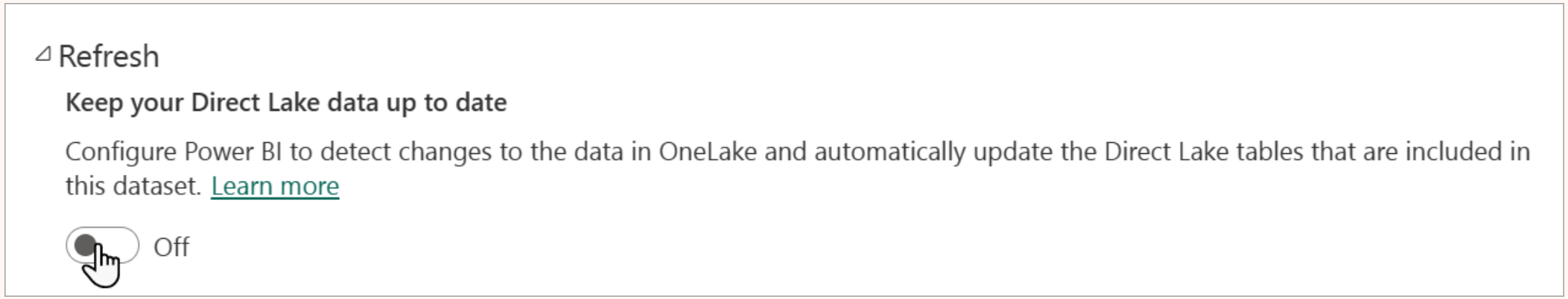


Framing



Automatic update (Refresh)

- Meta data updates
- Frequency of data updates (framing)
- Capacity impact with regards to caching + flushes the cache (partly)
- Date Integrity – keep data in sync (Fact updated but Dim not etc)



But wait…

Previously, all your data got evicted from cache after reframing.

But now;

- Data does not necessarily get evicted, if the segments in which the data was loaded did not change at the source.
- Behavior dependent on row groups (partitioning) of delta tables.

Forced eviction can be triggered by ProcessClear + ProcessFull commands.

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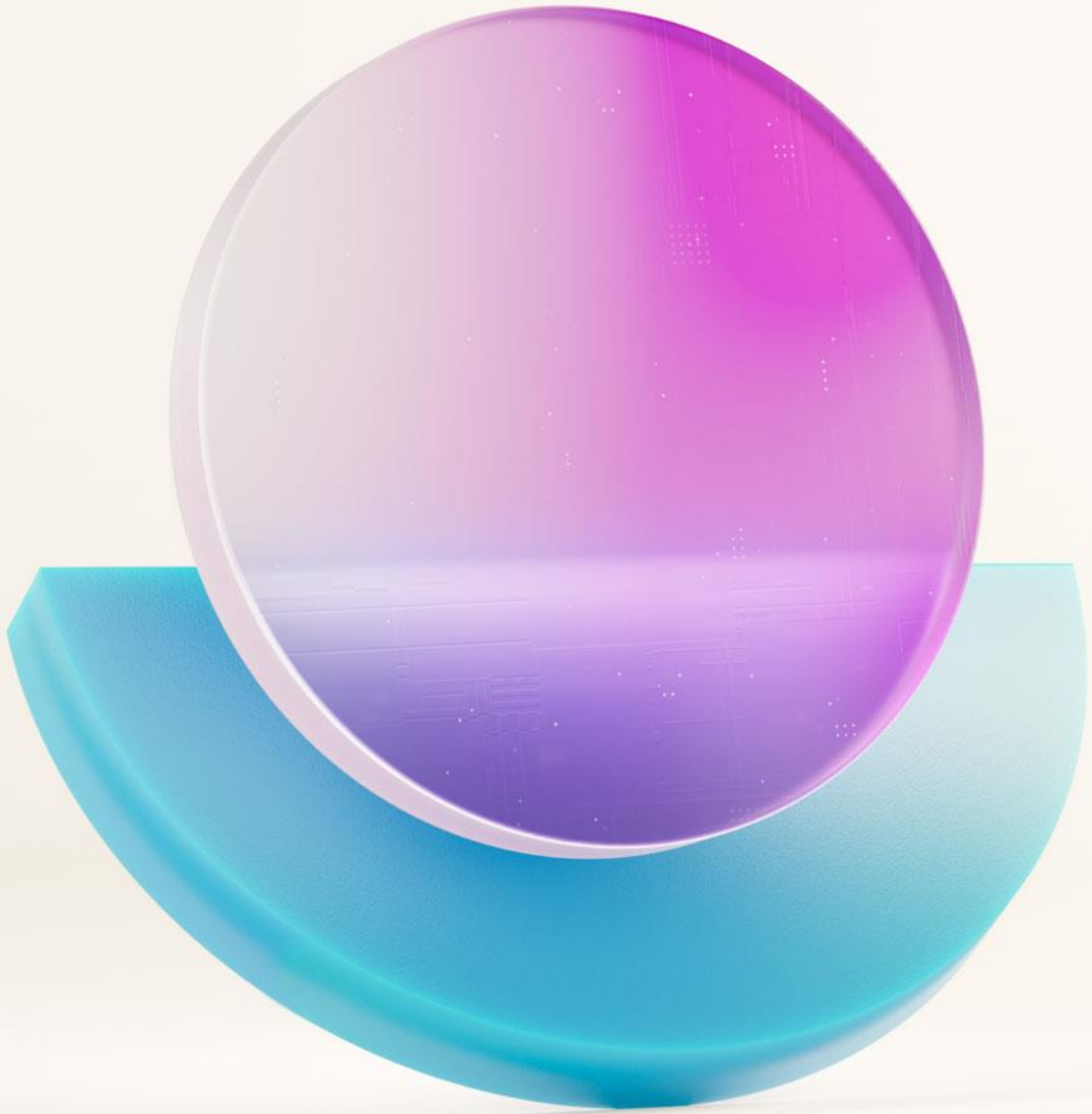

DEMO

Direct Lake

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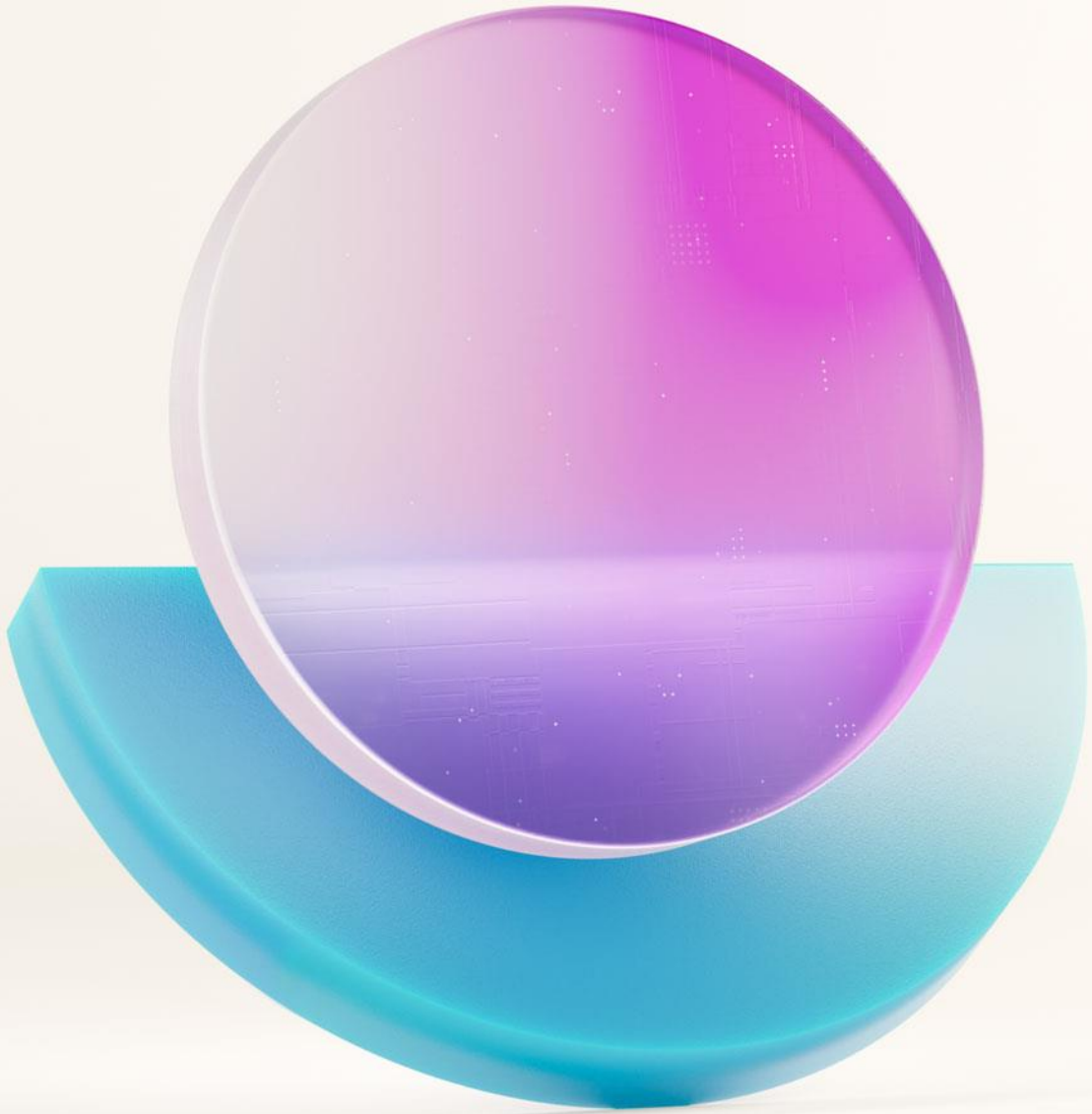
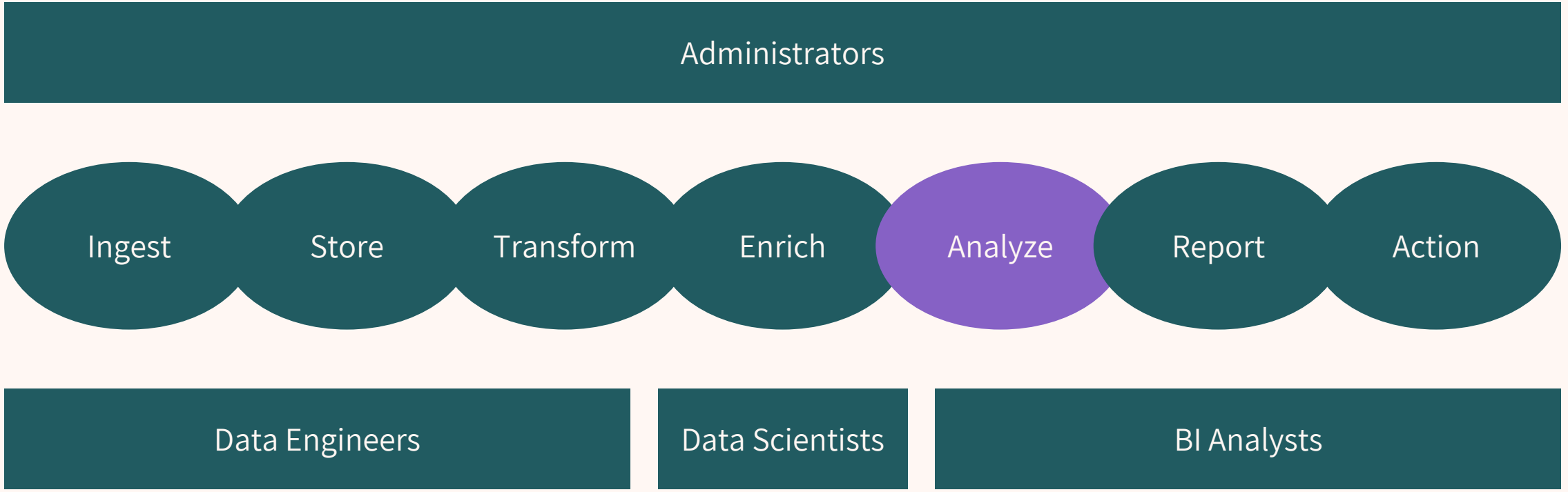


Semantic Link for Power BI devs and admins

Positioning of Semantic Link

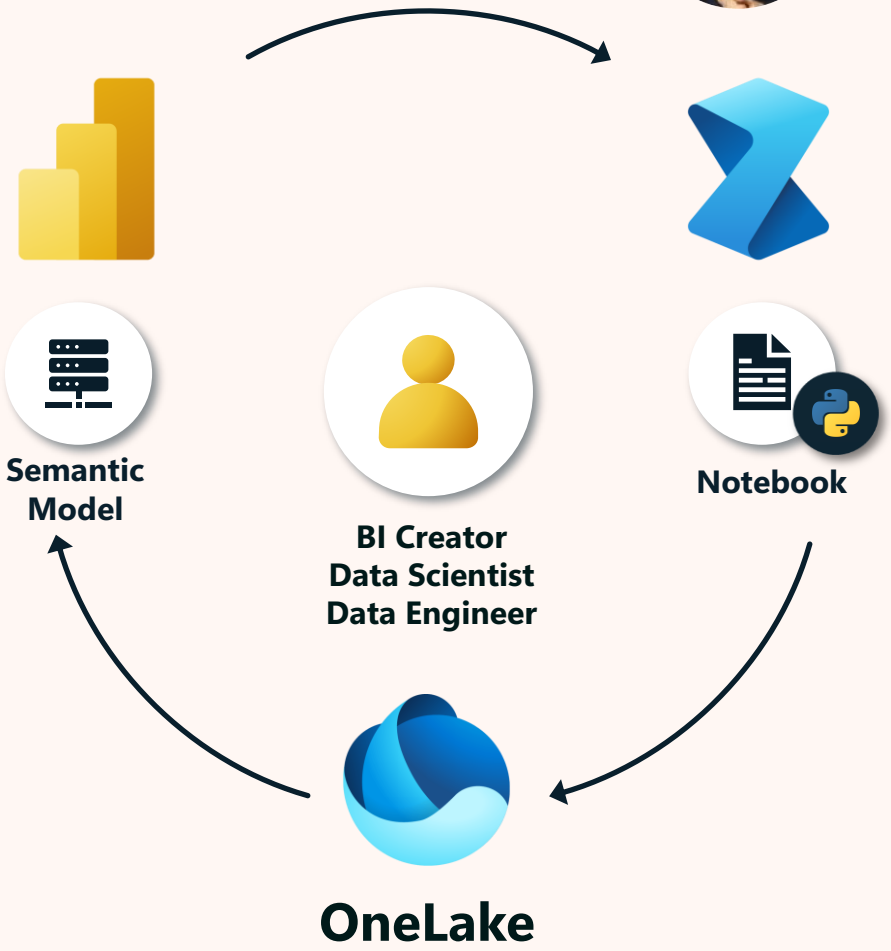


Semantic Link

Python data access for Power BI

- Support for Pandas and Spark
- Evaluate Power BI measures
- Read Power BI tables
- Validate and test your data
- Automate Power BI (e.g. refresh)

...and propagate metadata to unlock more options!



Semantic Link – Power BI use cases

Power BI general

- Documenting Power BI items
- Move Power BI items across workspaces
- Detect broken reports
- Rebind reports
- Set a report theme
- Migration of report-level measures to the semantic model
- Tenant Settings tracking

Semantic Models

- Best Practice Analyzer
- Vertipaq Analyzer
- Semantic model edits (TOM)
- Metadata translations
- Semantic model refresh
- Visualize a refresh
- Semantic model backups
- Run DAX with impersonation
- Manage Query Scale Out

Direct Lake

- Migration to Direct Lake
- Check Direct Lake guardrails
- Warm the cache for Direct Lake
- Analyze Delta tables for Direct Lake
- Fallback to DirectQuery diagnostics
- Update connection of a Direct Lake semantic model

Capacities

- Migration from P SKUs to F SKUs
- Migration from FT SKUs to F SKUs
- Capacity management

And more…

Semantic Link Labs

- Initiatied by Michael Kovalsky (Fabric CAT)
- Open-sourced python library on GitHub
- Extension to Semantic Link
- Programmatic access to Fabric items
- Wrapper functions for easy use of Power BI and Fabric APIs
- Full access to TOM (100+ functions)
- You **DO NOT** need to be a python expert!

https://github.com/microsoft/semantic-link-labs

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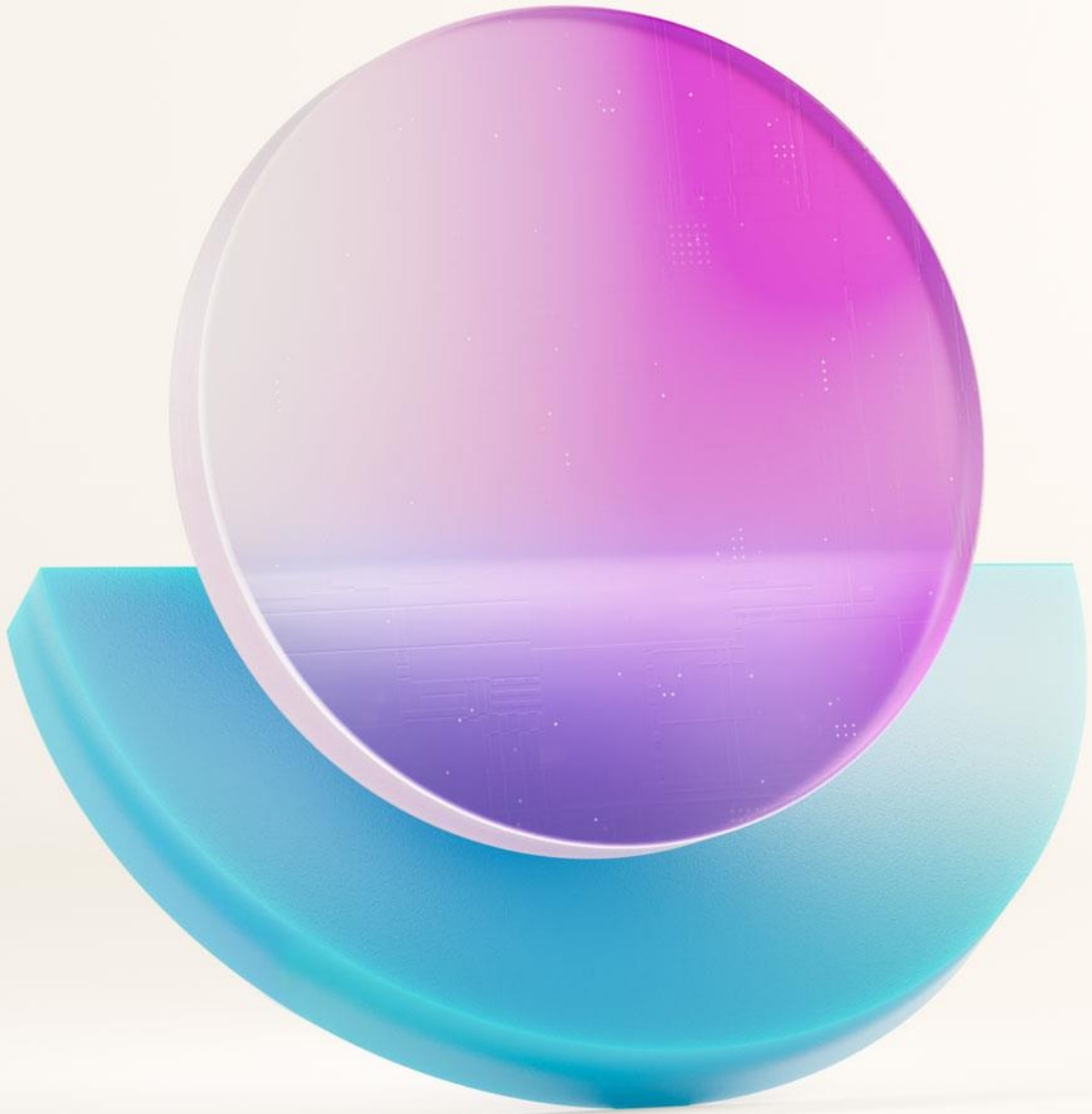

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Semantic Link

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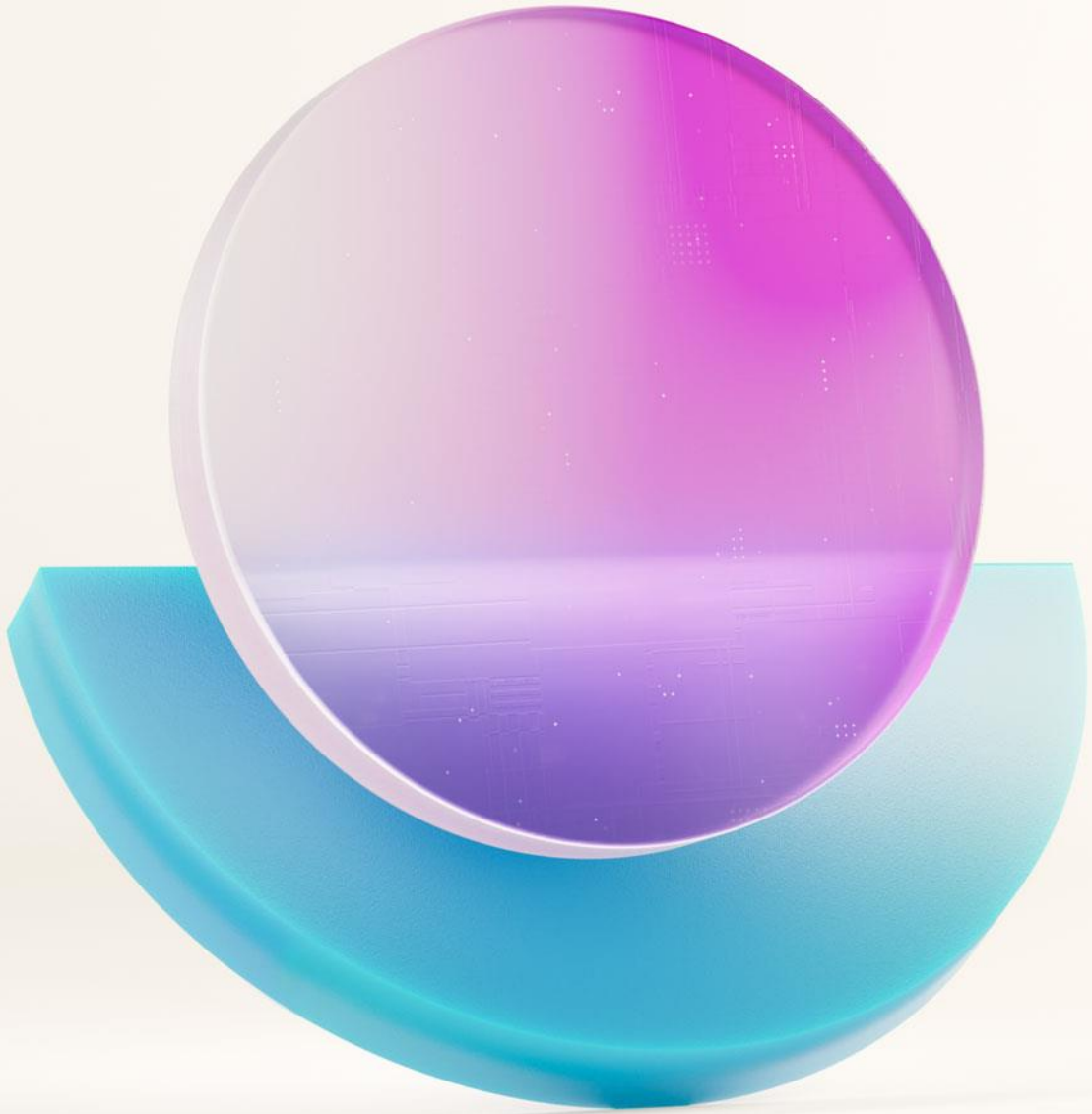
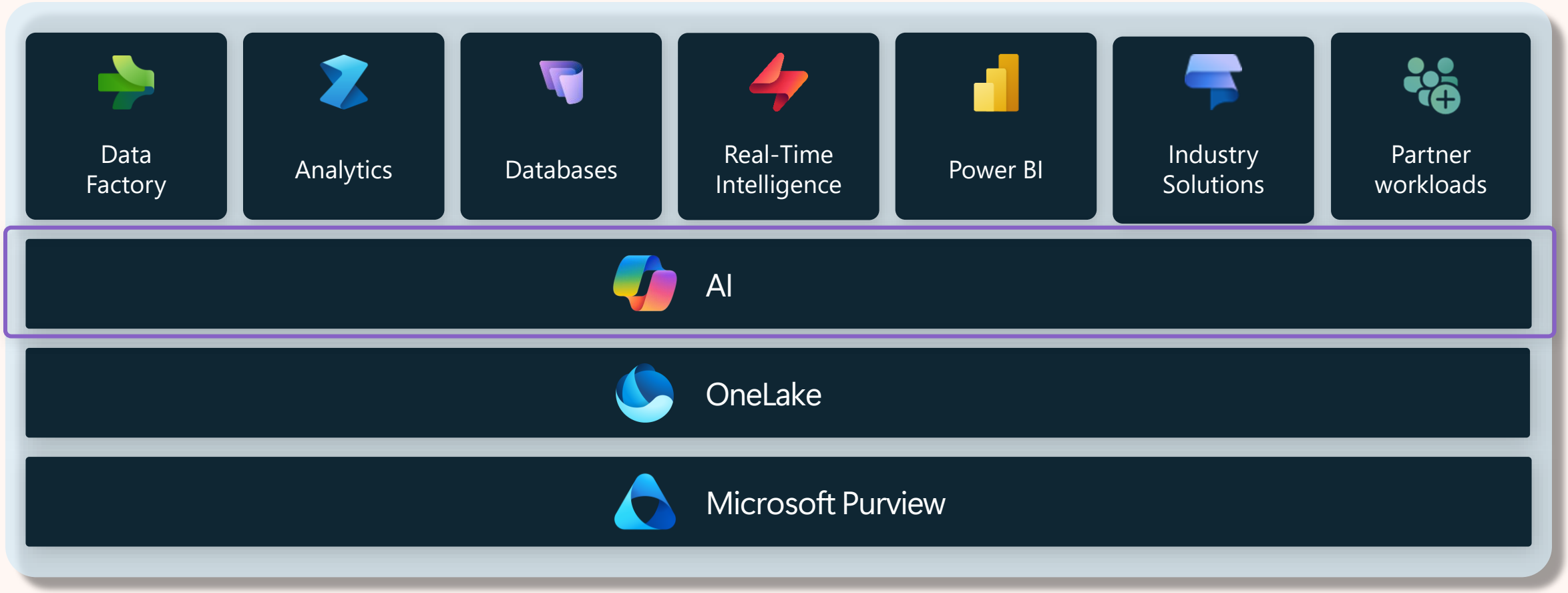


Copilot for Power BI users

Microsoft Fabric

The unified data platform for AI transformation



Copilot in Fabric

Data Factory	Data Warehouse	Data Engineering & Data Science	Databases	Real-Time Intelligence	Power BI
Get intelligent code generation to transform data with ease and code explanations to help you better understand complex tasks.	Write and explain T-SQL queries, or even make intelligent suggestions and fixes while you are coding.	Quickly generate code in Notebooks to help work with Lakehouse data and get insights.	Write and explain T-SQL queries, or even make intelligent suggestions and fixes while you are coding.	Translate questions into KQL queries that you can execute.	Quickly create report pages, natural language summaries, and generate synonyms.

Copilot in Fabric

Which copilot are we talking about…?

Copilot accelerated experiences

Help me build stuff

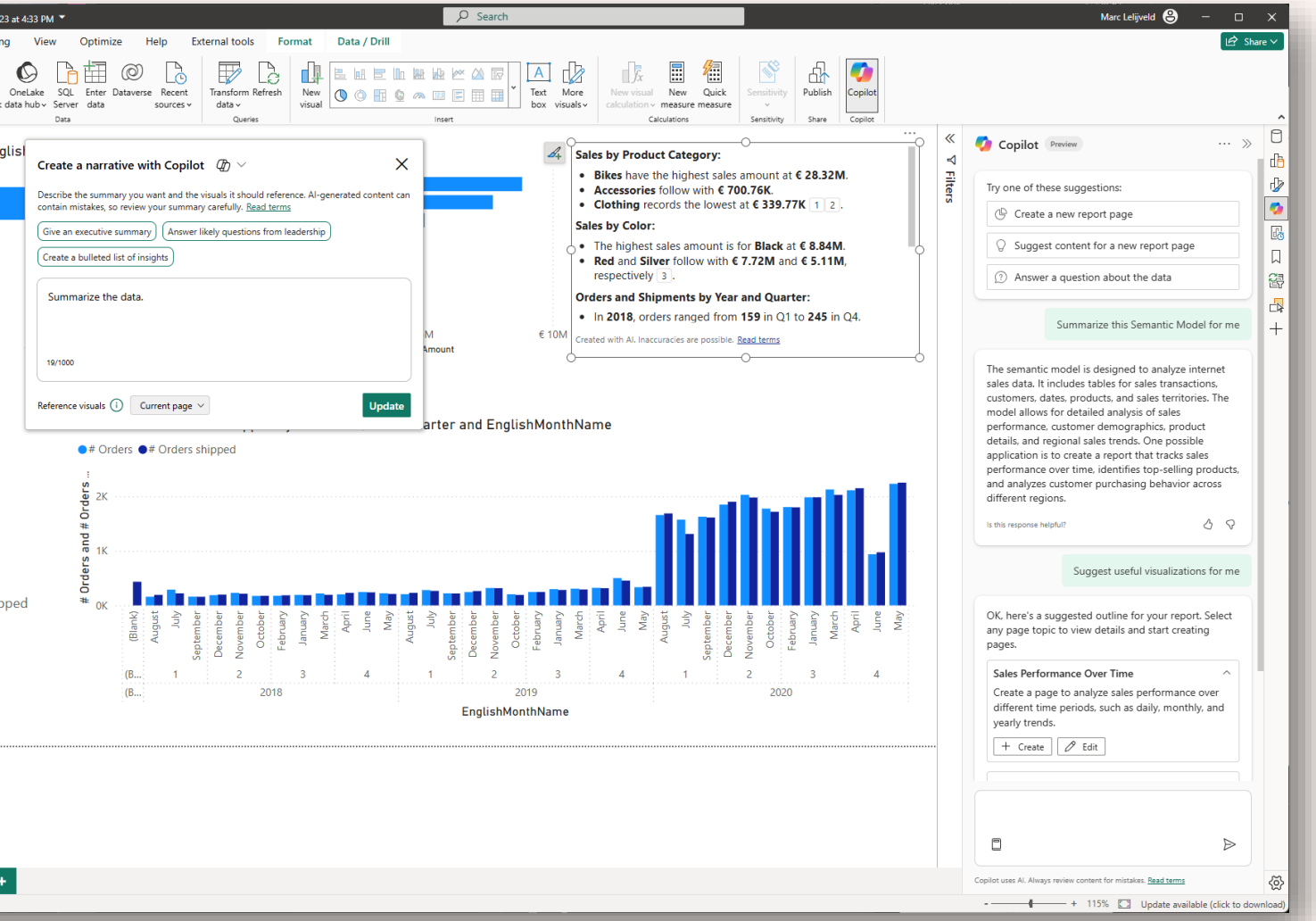
AI-driven insights

Summarize and find insights

Custom generative AI for your data

Custom configured and build

Copilot – Power BI use cases



How can copilot help you

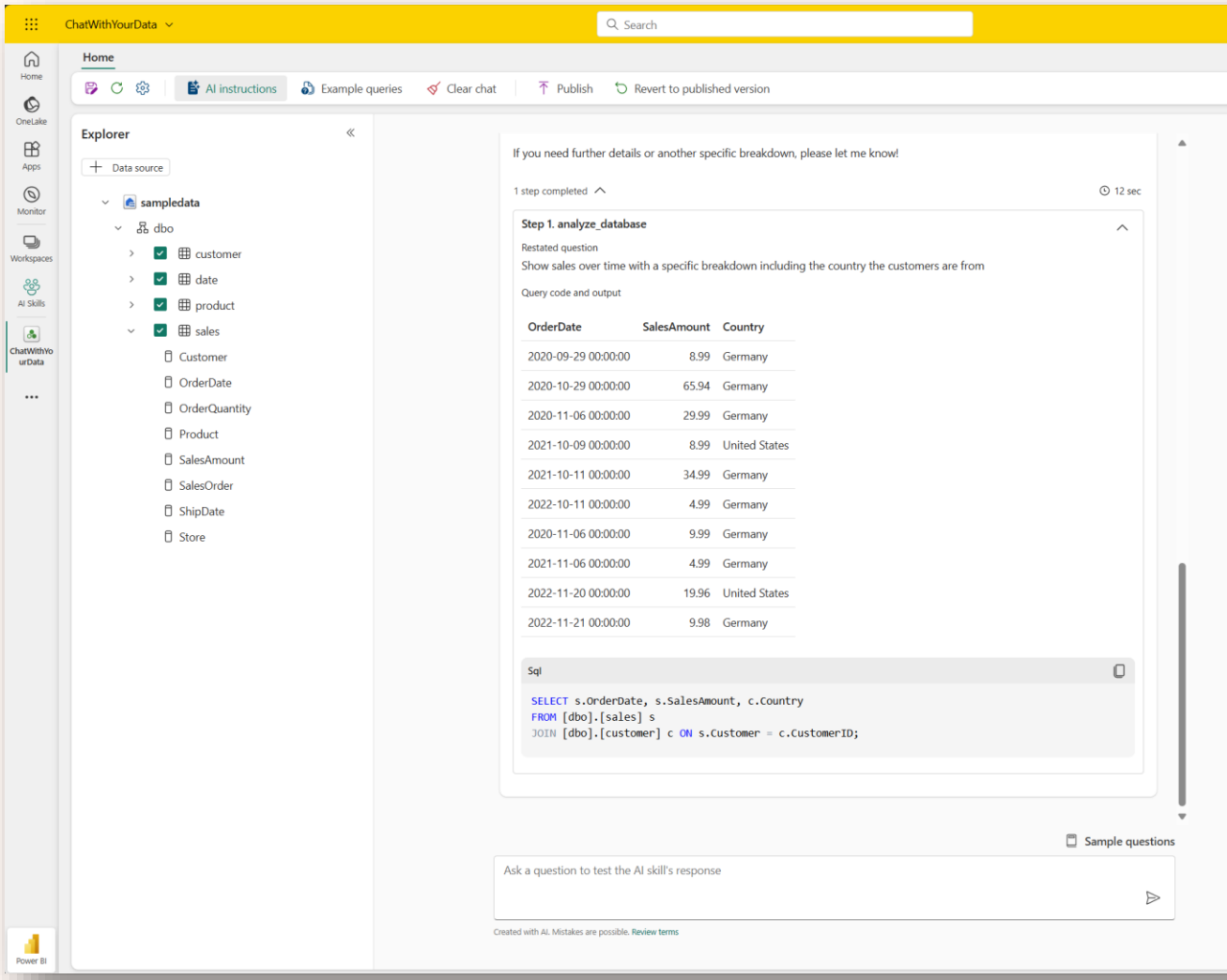
- Summarize semantic model
- Suggest report content
- Create report page
- Create summary visual (Smart narrative)
- Add synonyms to model
- Add descriptions to measures
- Write DAX (& DQV)

... and more!

Data Agents on top of Semantic Models

Build custom generative AI experiences for your data with Data Agents *(previously known as AI Skills)*

- Allow your users to talk to data in Fabric
- Create, curate and configure a data expert on your data domain
- Share Data Agents with other creators and consumers in Fabric



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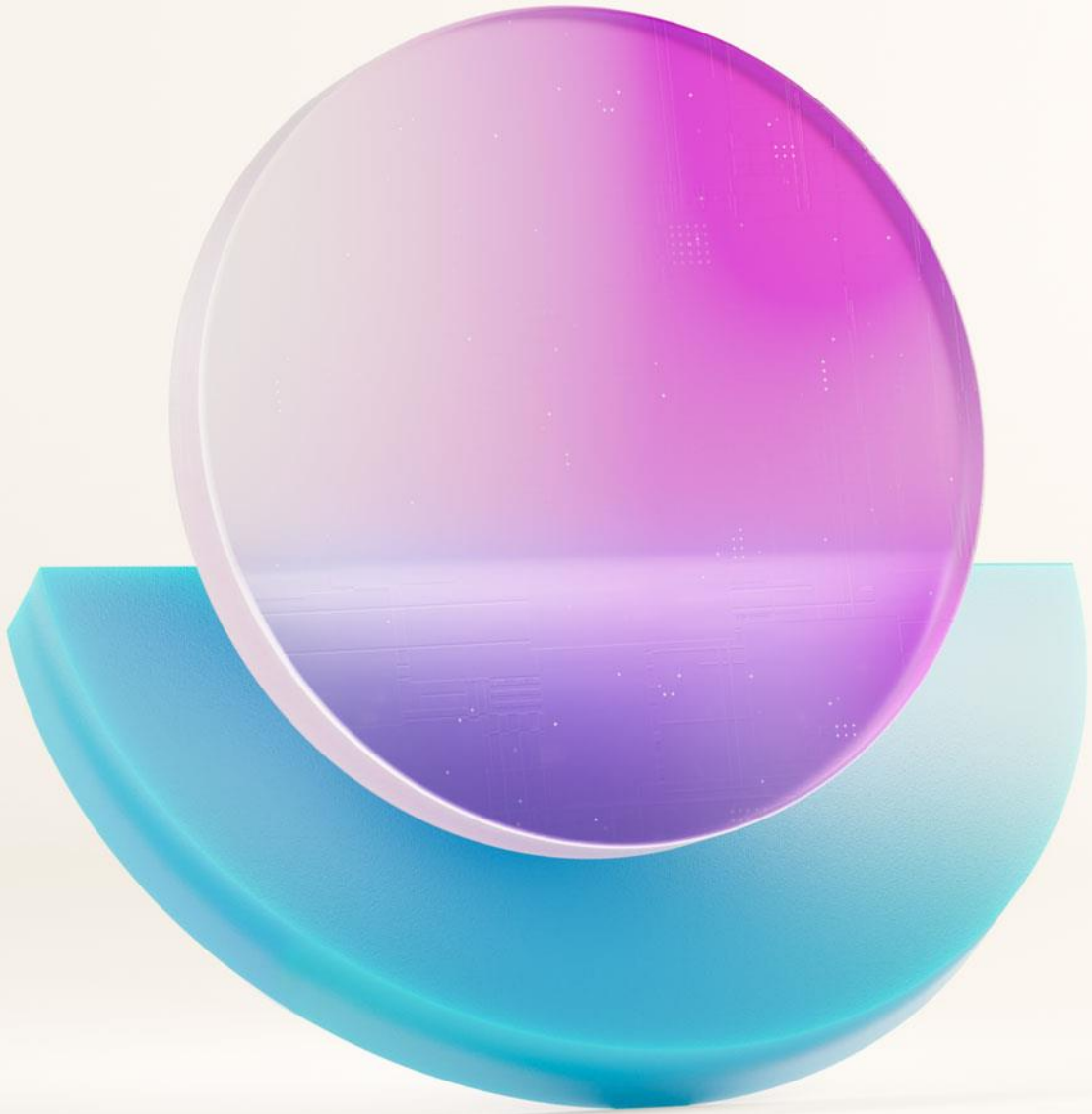
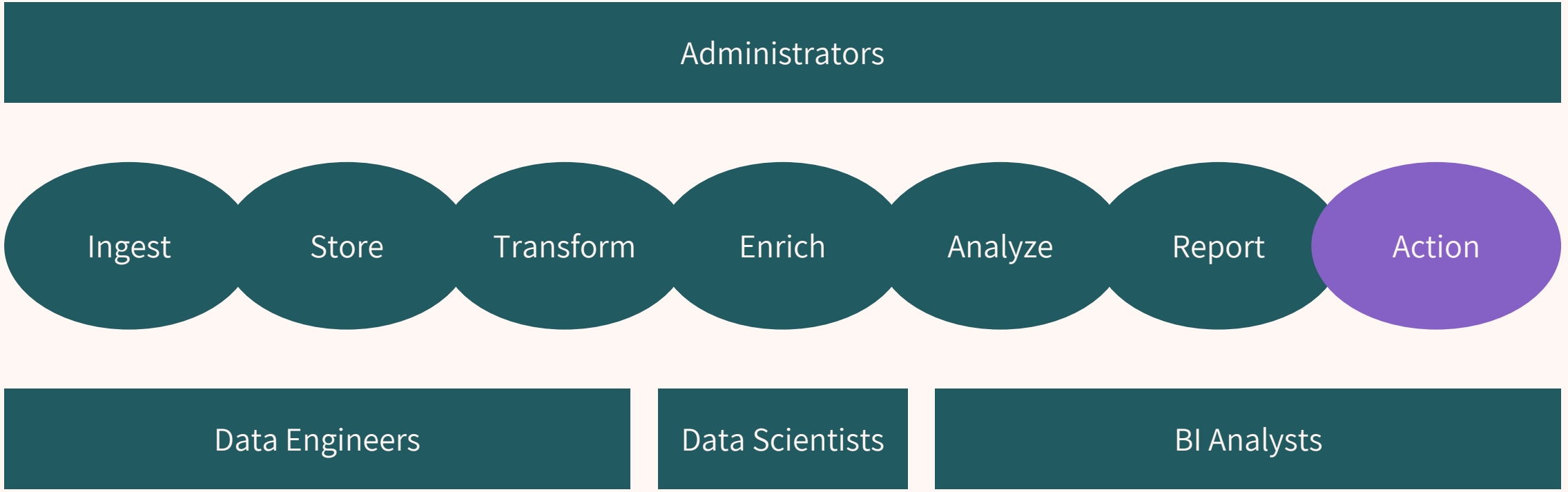


From insights to actions with Data Activator

Positioning of Data Activator



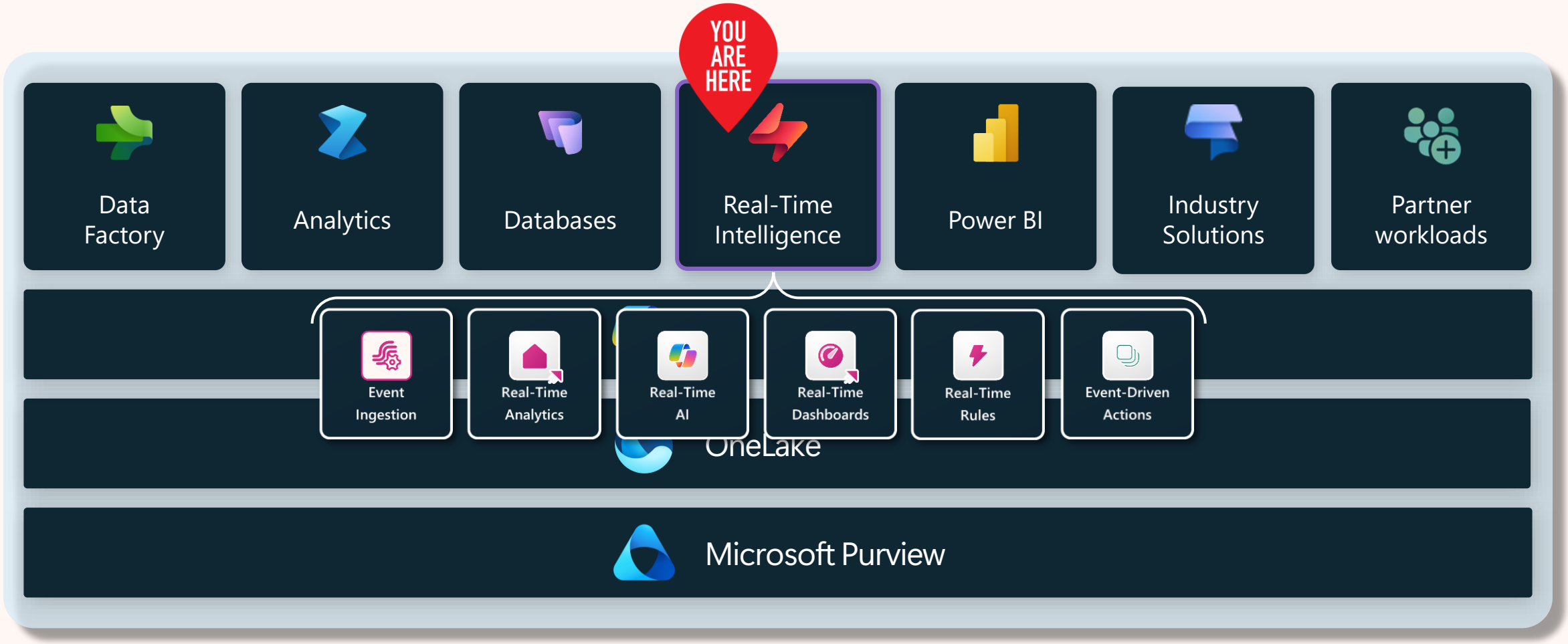
Data creates value when it drives timely action

Finance: request payment for overdue invoices

Logistics: if package status stalled, start investigation

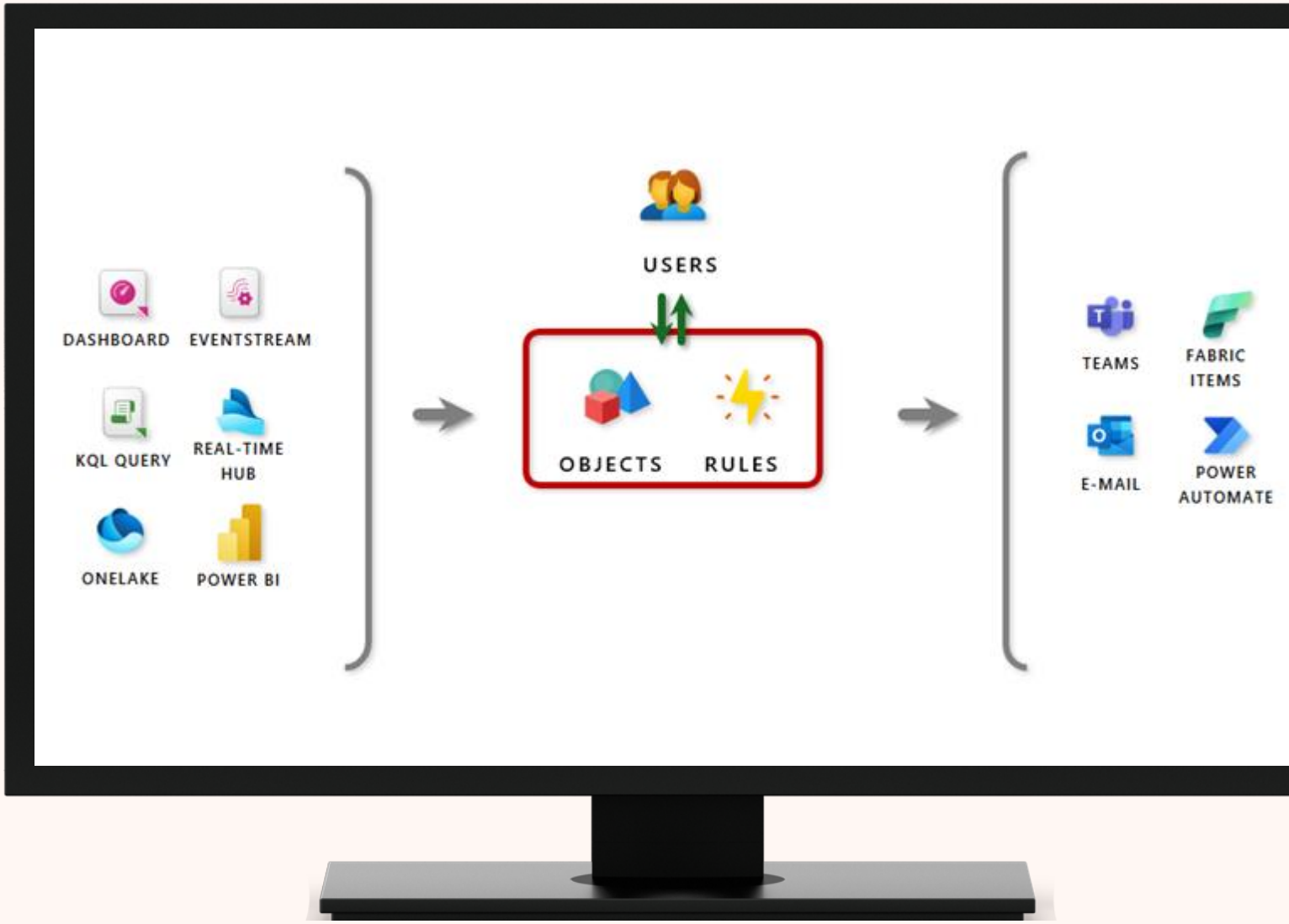
Transportation: detect low tire pressure in vehicles

Data Activator in Microsoft Fabric



How Data Activator works?

- Events
- Objects
- Rules
- Actions



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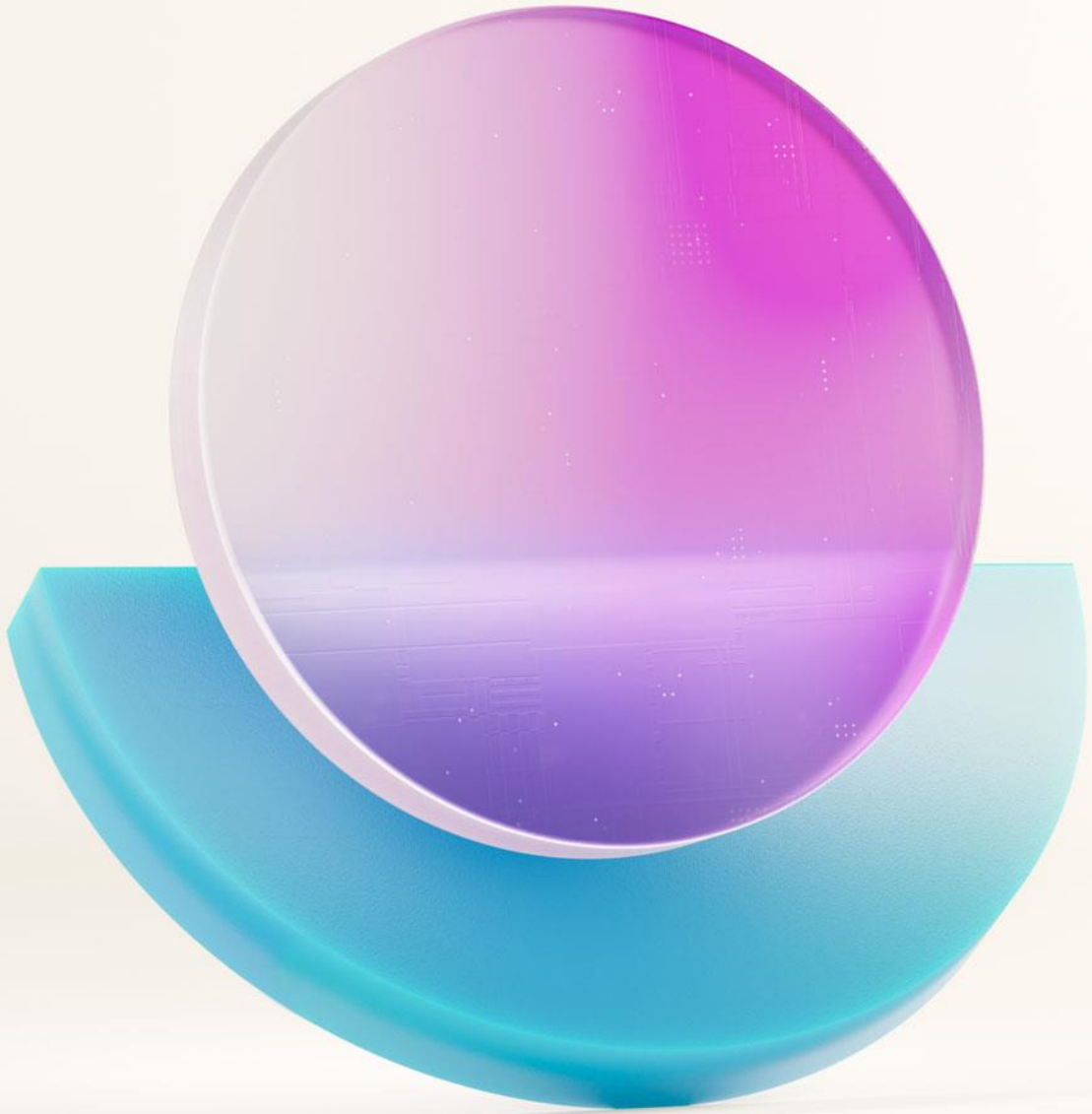

DEMO

Data Activator

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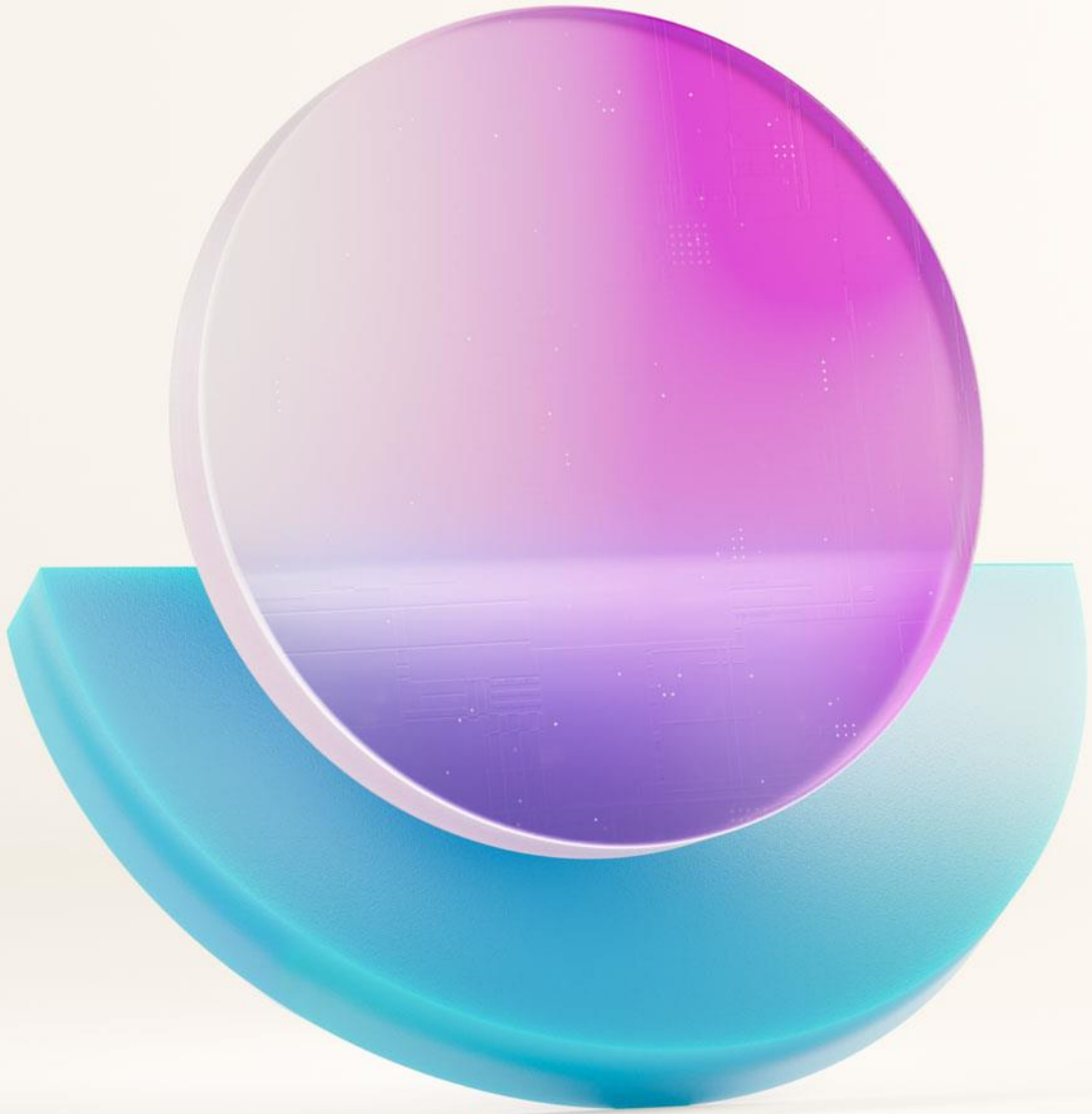


Wrap up

Wrap up

- Fabric brings many new **capabilities**
- Many of these capabilities are **new for Power BI folks**
- **Not necessarily**, you need to embrace all of this
- With Fabric, you build end-to-end solutions with your **existing skill set**
- It does open **new learning opportunities** in a familiar interface

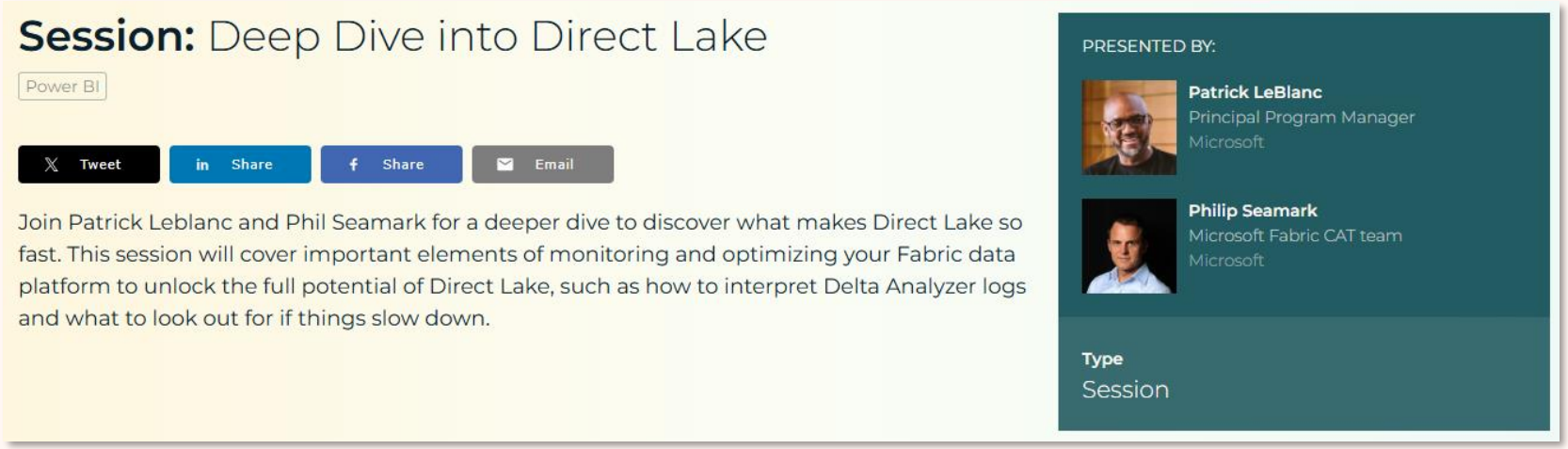
As Power BI dev, musts:

- Explore Semantic Link to **monitor and optimize** your semantic models

Resources

- Fabric OneLake
  https://learn.microsoft.com/en-us/fabric/onelake/onelake-overview
- All about Direct Lake
  https://learn.microsoft.com/en-us/fabric/fundamentals/direct-lake-overview
- Copilot in Fabric
  https://learn.microsoft.com/en-us/fabric/fundamentals/copilot-fabric-overview
- Semantic Link
  https://learn.microsoft.com/en-us/fabric/data-science/semantic-link-overview
- Activator
  https://learn.microsoft.com/en-us/fabric/real-time-intelligence/data-activator/activator-introduction

Other related sessions to check out



Deep Dive into Direct Lake
by Patrick LeBlanc & Philip Seamark

Optimizing and Automating Microsoft Fabric and Power BI with Semantic Link/Labs
by Markus Cozowicz & Michael Kovalsky

Microsoft

Get Involved in the Fabric Community

aka.ms/FabricCommunity
Connect with community members, ask questions, and learn more about Fabric

aka.ms/FabricUserGroups
Find a user group that matches your interests in your area or online

aka.ms/SuperUsers
Spread your Fabric knowledge, insights, and best practices with others

aka.ms/MVP
Technology experts that share their knowledge and passion with the community