

From Dashboards to Dialogues

Reinventing Data Interaction with AI




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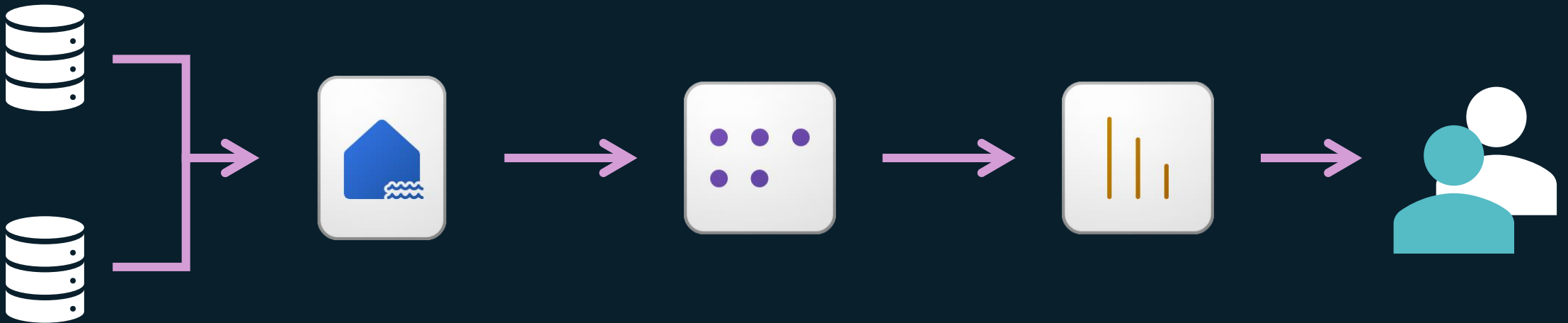
FAVORITE STUFF:



Understanding data interactions

Typical analytics solution today

Simplified overview



Why should I open a report
to get to my insights?



What if you could **chat** with your data?

Setting a proper data foundation

Personas

Customer

Financial Advisors

Portfolio Managers

...

Modern Technology

Co-pilot / Chatbot

Predictions

Data Management
Platform



Fabric

Platforms

Digital Experience

CRM & ERP

Document
Management

...

Set a proper foundation!
Cause nobody wants to build a
house on quicksand, right?



Microsoft Fabric as data foundation



Data
Factory



Data
Engineering



Data
Warehousing



Data
Science



Real-Time
Intelligence



Power BI



Databases



Industry
Solutions



AI



OneLake



Purview

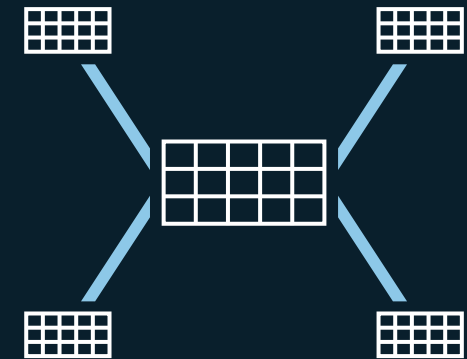
A decent data solution is more important than ever!



Structured platform
striving for a single
source of truth



Transformation
done upstream



Semantics and
business logic
added

Without data...
there is no AI!

Exploring solution areas

What are the alternatives to copilot?

What can you conclude from the orders placed versus the orders shipped?



Power BI Q&A

Q&A Visual

Exact string matching between prompt and Semantic Model

Based on:

- Tables
- Columns
- Measures

... other model objects

Ask a question with Q&A

Ask a question about your data

Try one of these to get started

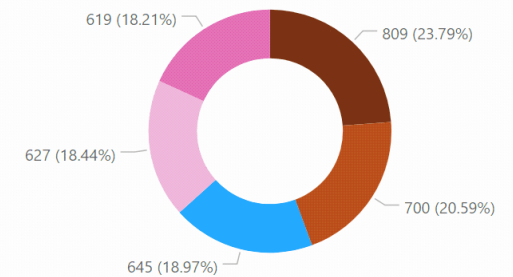
what is the #games by type

top genres by #games

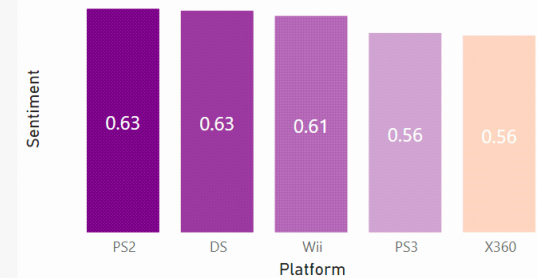
top rating by #games

Show all suggestions

Number of games by publisher



Sentiment by platform



Q&A training

Overall setup

- Training by looking at previous questions & answers from users
- Fields can be excluded from potential answers

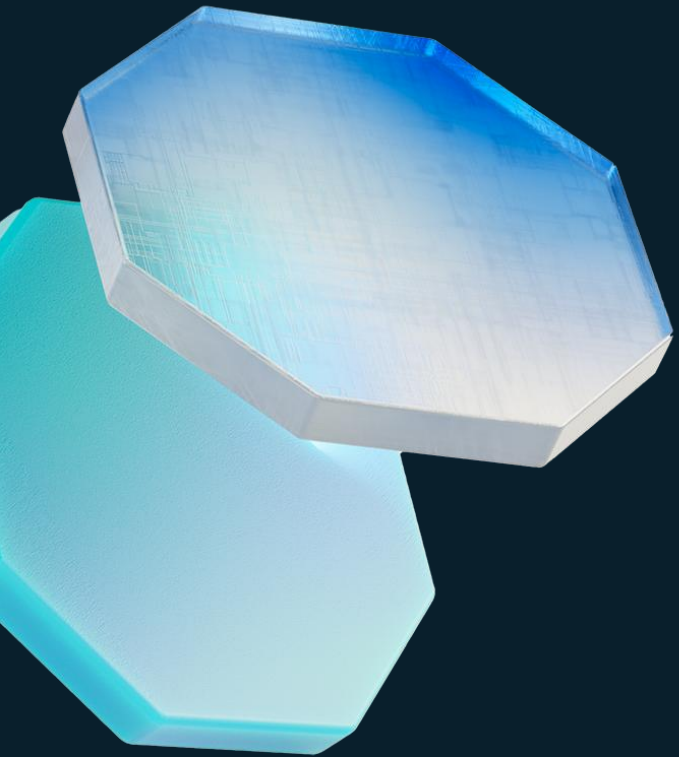
Can be enriched by

- (Field) Synonyms & descriptions
- Linguistic schema

JSON

 Copy

```
product_has_category:  
  Binding: {Table: Products}  
  Phrasings:  
    - Attribute: {Subject: product, Object: product.category}
```



Demo

Q&A visual

Copilot experiences

“ IF THE ONLY TOOL YOU HAVE IS A HAMMER,
IT IS TEMPTING TO TREAT EVERYTHING
AS IF IT WERE A NAIL ”



Should we hammer it
with Copilot?

Image from: <https://x.com/Vaccinologist/status/1622620533706588161>

Copilot in Fabric

Which copilot experiences do we have?



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 in Fabric

Focused on the different workloads



Data Factory

Get intelligent code generation to transform data with ease and code explanations to help you better understand complex tasks.



Data Warehouse

Write and explain T-SQL queries, or even make intelligent suggestions and fixes while you are coding.



Data Engineering & Data Science

Quickly generate code in Notebooks to help work with Lakehouse data and get insights.



Databases

Write and explain T-SQL queries, or even make intelligent suggestions and fixes while you are coding.



Real-Time Intelligence

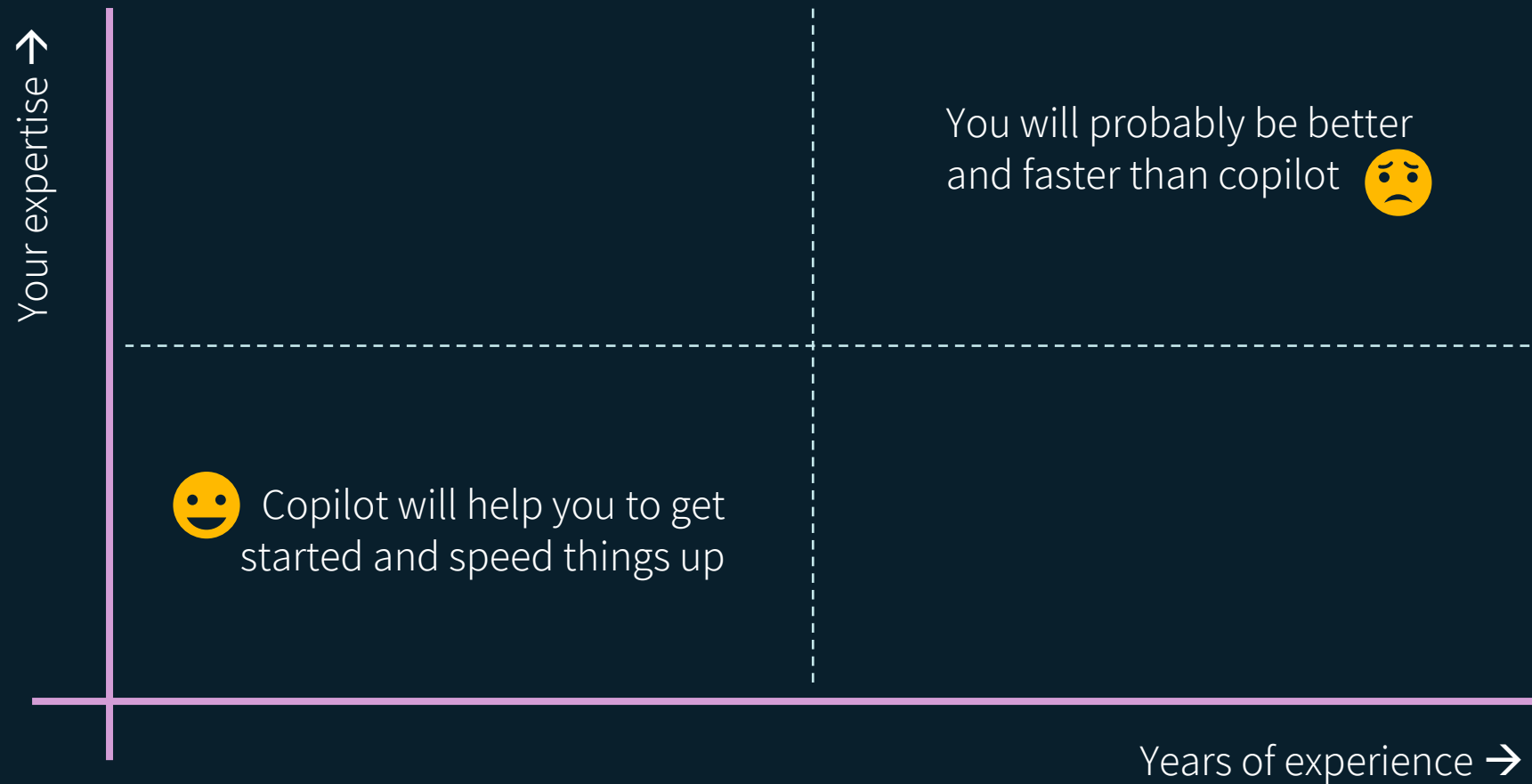
Translate questions into KQL queries that you can execute.



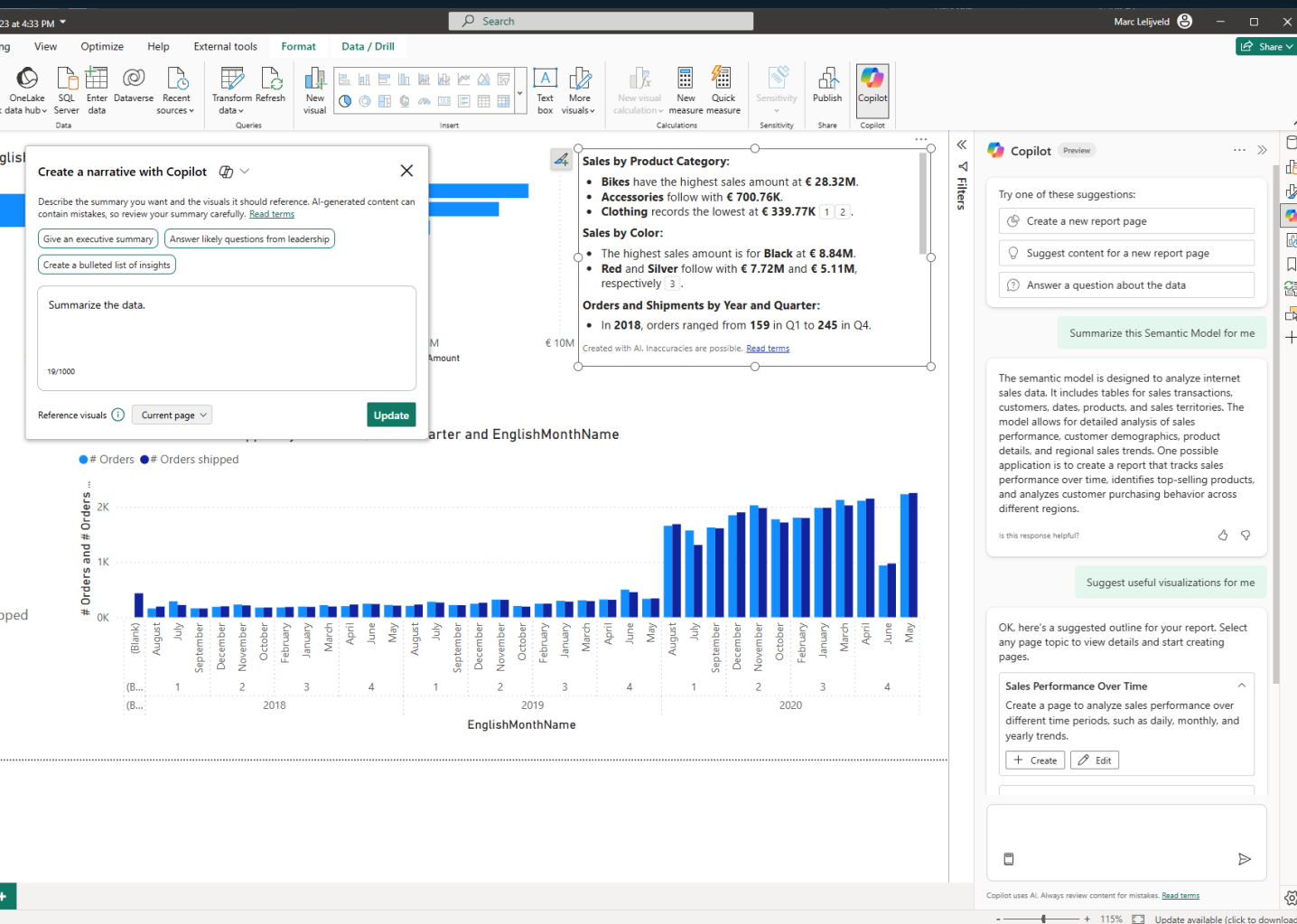
Power BI

Quickly create report pages, natural language summaries, and generate synonyms.

Who copilot is for



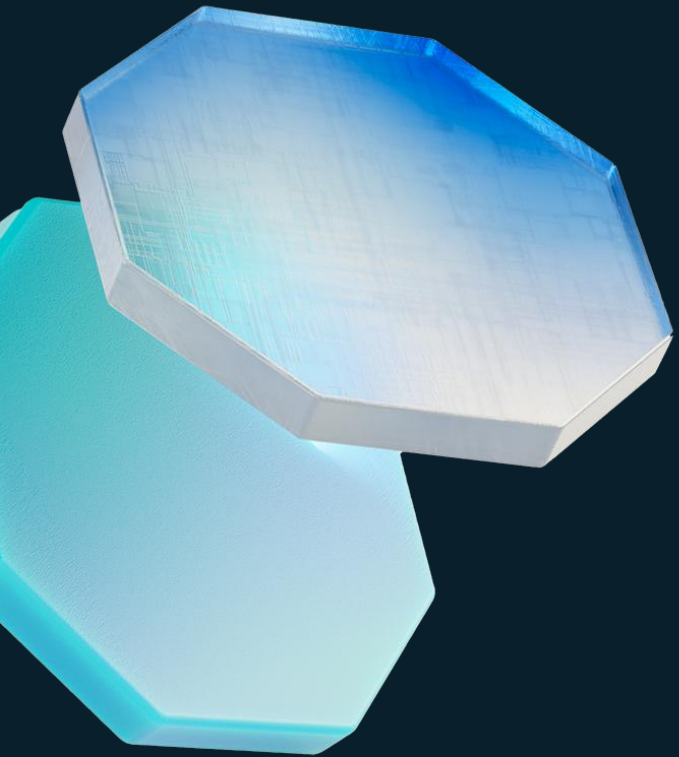
Copilot – Power BI use cases



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!



Demo

Copilot consumer experience

Data Agents

Previously known as AI Skills

Introducing Data Agents



The **conversational Data Agent** allows users to interact with data naturally, enhancing accessibility and usability.



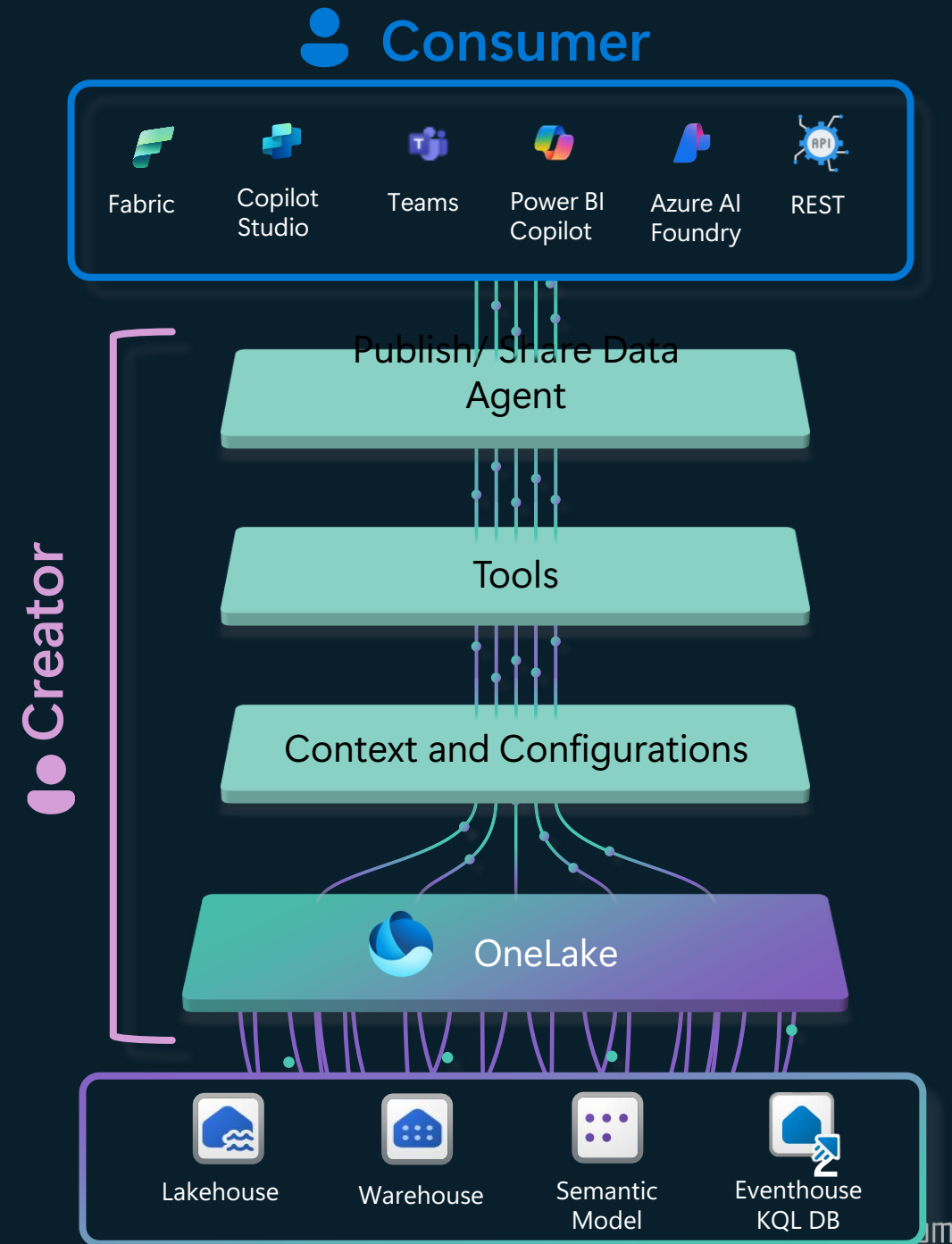
Improved chat canvas for creators with **new debugging capabilities**, making it easier to understand and refine responses.



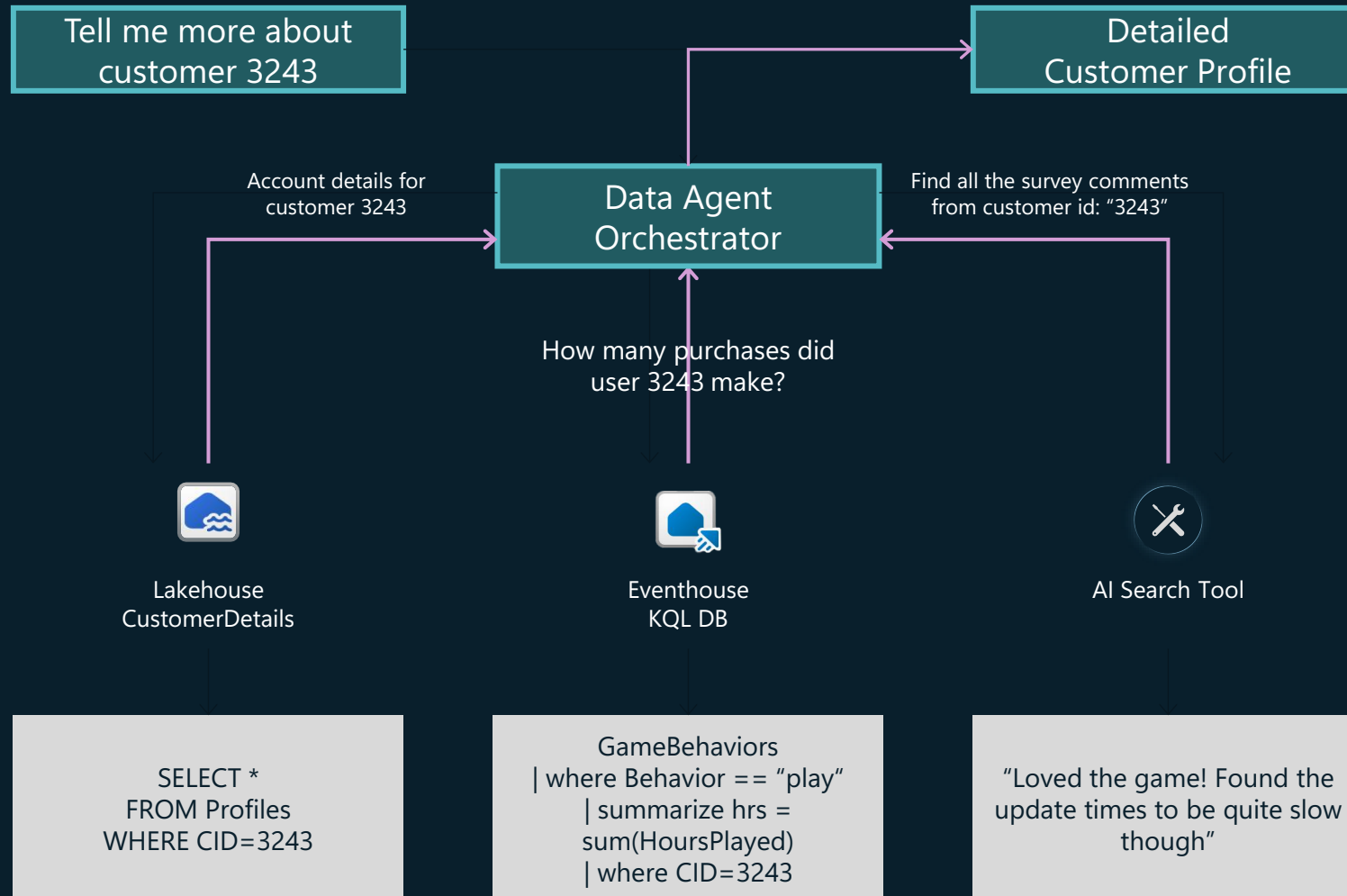
Seamlessly reason over multiple data sources, including **Lakehouses, warehouses, semantic models and Eventhouse KQL databases**.



Your Data Agent can be consumed inside and outside of Fabric. Stay tuned for **upcoming integrations** with Copilot Studio, Teams, Azure AI Foundry and your own custom applications.



Data Agent Architecture



- 1 The data agent delegates questions to specific tools or data sources.
- 2 Data Sources are specialized at taking a natural language question and generating a response – query or result.
- 3 Data Sources & Tools supply their response back to the orchestrator – allowing it to process the information and think about the next step or return the summarized result.

Understanding the Data Agent creator experience

The screenshot displays the macaw Data Agent creator interface. The interface is divided into several sections:

- Example queries:** A callout points to the 'Example queries' tab in the top navigation bar.
- Connected source tables:** A callout points to the 'sampledata' database in the Explorer pane on the left, which lists tables like customer, date, product, productcategories, and sales.
- Chat window:** A callout points to the bottom section of the interface where users can ask questions to test the data agent's response.
- Notes to enrich model:** A callout points to the 'AI instructions' section on the right, which allows users to provide detailed system prompts to guide the data agent.
- Reasoning for results:** A callout points to the 'Query code' section in the center, which displays the SQL query generated by the data agent for the user's question.
- Instructions for sources:** A callout points to the 'sampledata instructions' section on the right, which allows users to provide specific instructions for each connected data source.

The interface also includes a top navigation bar with a search bar and a 'Draft' button, and a bottom status bar with a 'Power BI' icon.

Creator configuration

Agent Instructions

Intended Use Cases:

- Specify which data sources to route for specific questions
- Guide how the agent interprets user intent

What to include:

- Map terminology to user intent
- Define steps for handling key questions
- Set response style and tone

Data Source Instructions

Intended Use Cases:

- Provide clarity on how to use each source
- Guide table selection for topics
- Ensure correct query logic

What to include:

- Descriptions of key tables & columns
- Recommended table usage for certain topics
- Example column values and filter patterns

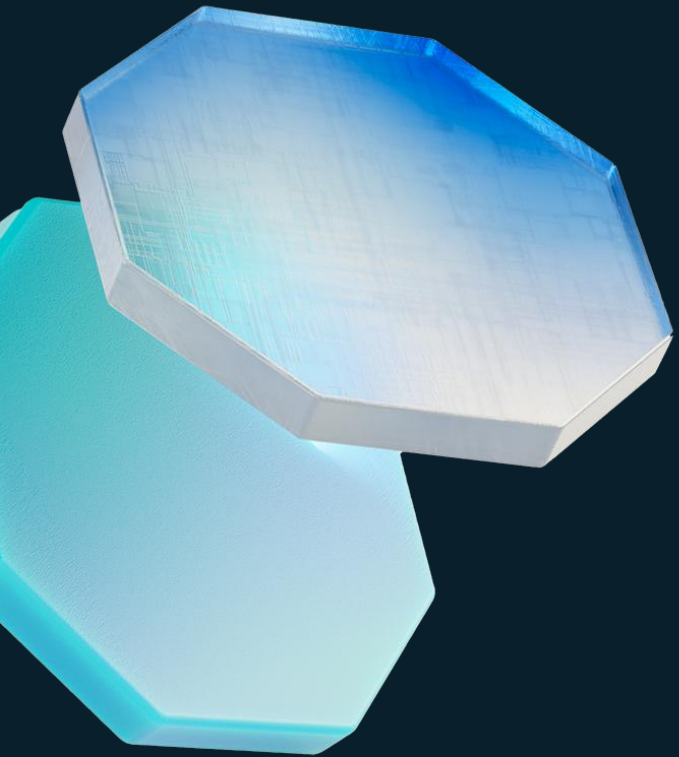
Example Queries

Intended Use Cases:

- Reflect advanced logic
- Examples should highlight join patterns or expected values

What to include:

- Representative set of questions a consumer may ask



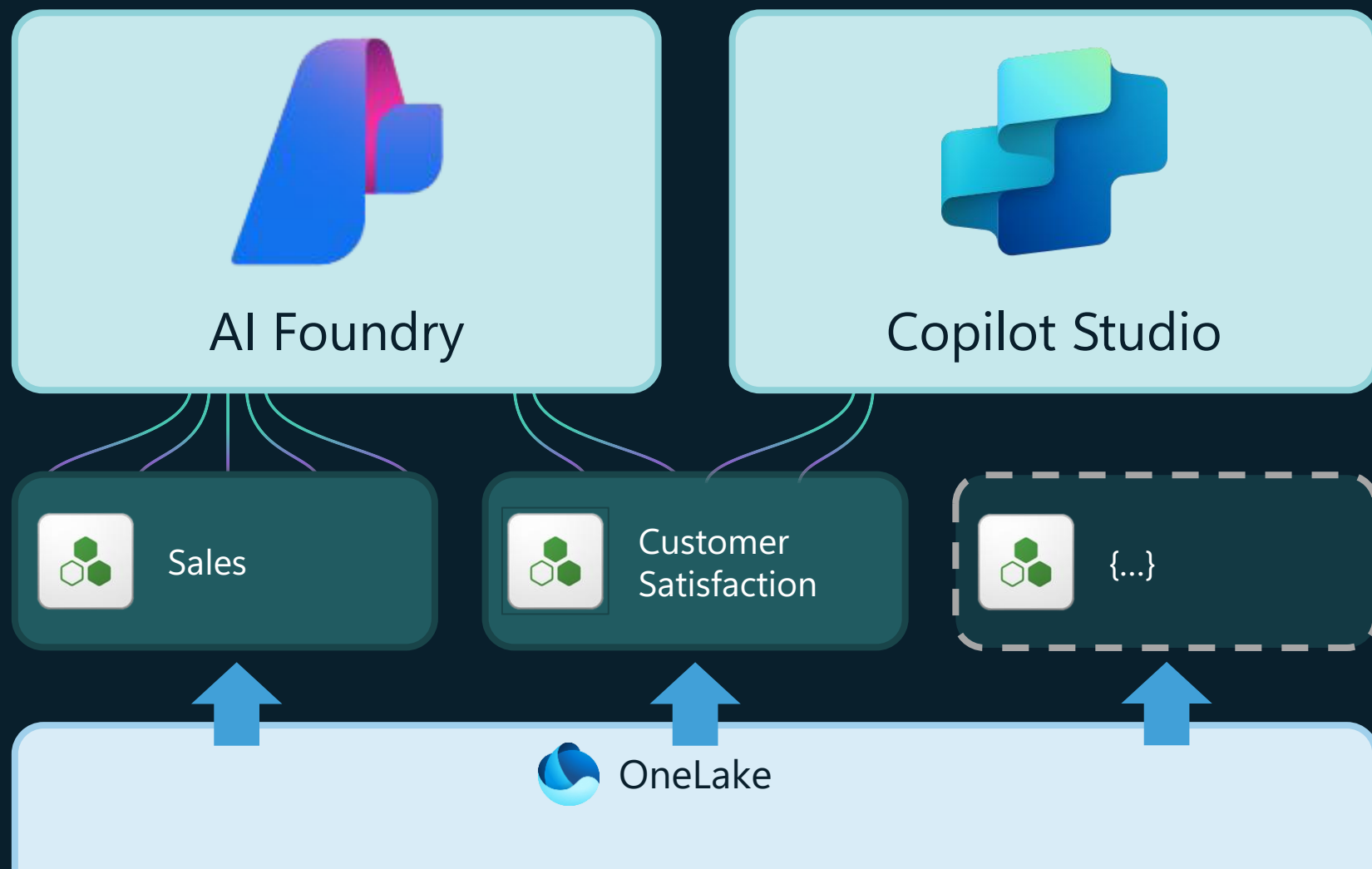
Demo

Data Agents

Agent architecture

One to rule them all?

No!



Future of Data Agents – announced at FabCon Europe

Unstructured Data in the Data Agent

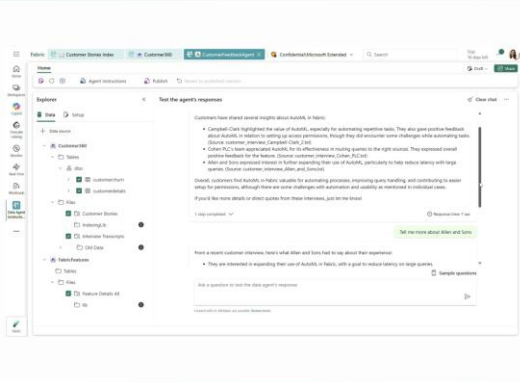
Private Preview

Leverage **built-in notebook utilities** to index PDFs and TXT files

Eliminate the need to provision or manage search resources

Select **Lakehouse folders** and ask natural language questions over unstructured data

Sign up for the Private Preview:
aka.ms/unstructured-data-prpr



Bring your own AI Search index

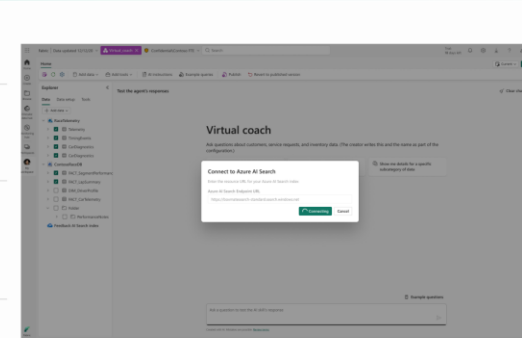
Sneak peak

Bring your own **AI search index** to a Fabric Data Agent

Use the built-in AI Search tool for **custom indexes**

Ask natural language questions over your AI Search index and **join** with other data sources

Register interest for PrPr:
aka.ms/unstructured-data-prpr



Evaluate data agents

Public Preview

Native support for **data agent evaluation** through the Fabric data agent SDK

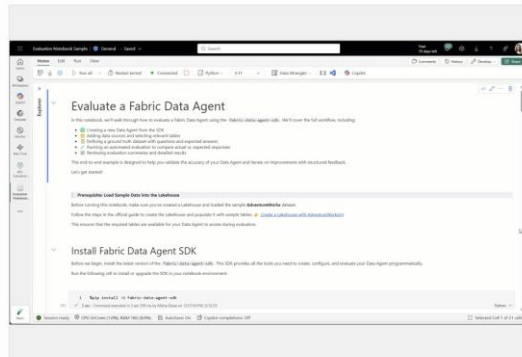
Run structured evaluations using Python from notebooks

Validate accuracy before production deployment

Tune prompts for better performance

Benchmark improvements over time

New: Built-in utilities to help refine example queries and configurations



CI/CD and ALM for Data Agents

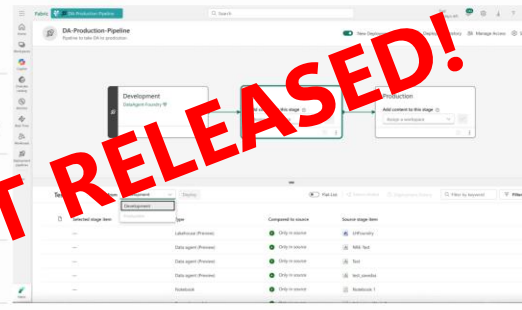
Sept 2025

Support for data agents in **Git and deployment pipelines**

Configuration changes tracked for development and published versions

Lineage is preserved during pipeline deployments in Git-connected workspaces

Enables **Agent-Ops** for **streamlined AI development**



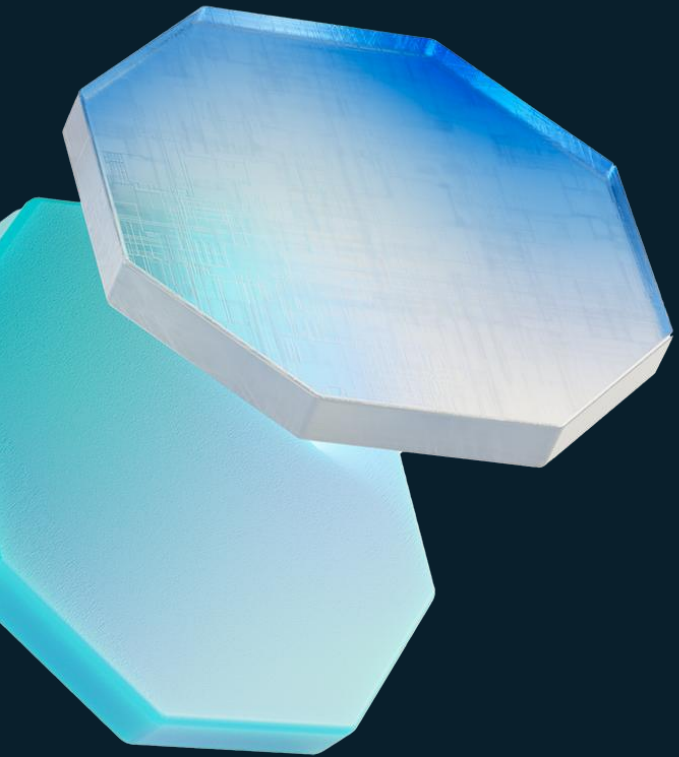
JUST RELEASED!

Fabric Data Agent SDK

- **Programmatic Management:** Create, update, and delete Data Agent artifacts seamlessly.
- **Data Source Integration:** Easily connect to and integrate multiple data sources, for enhanced data analysis and insight generation.
- **OpenAI Assistants API Support:** Use the OpenAI Assistants API for rapid prototyping and experimentation.
- **Workflow Automation:** Automate routine tasks to reduce manual efforts and improve operational efficiency.
- **Resource Optimization:** Optimize configuration and management of Data Agent resources to better align with specific customer needs.

 Copy

```
%pip install fabric-data-agent-sdk
```



Demo

Data Agent SDK

Quality improvements

Keep in mind!

The answers will only be as good as your data!

siso

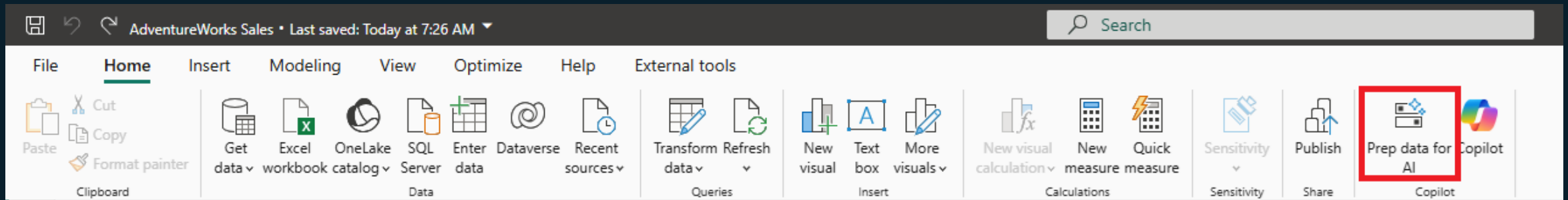
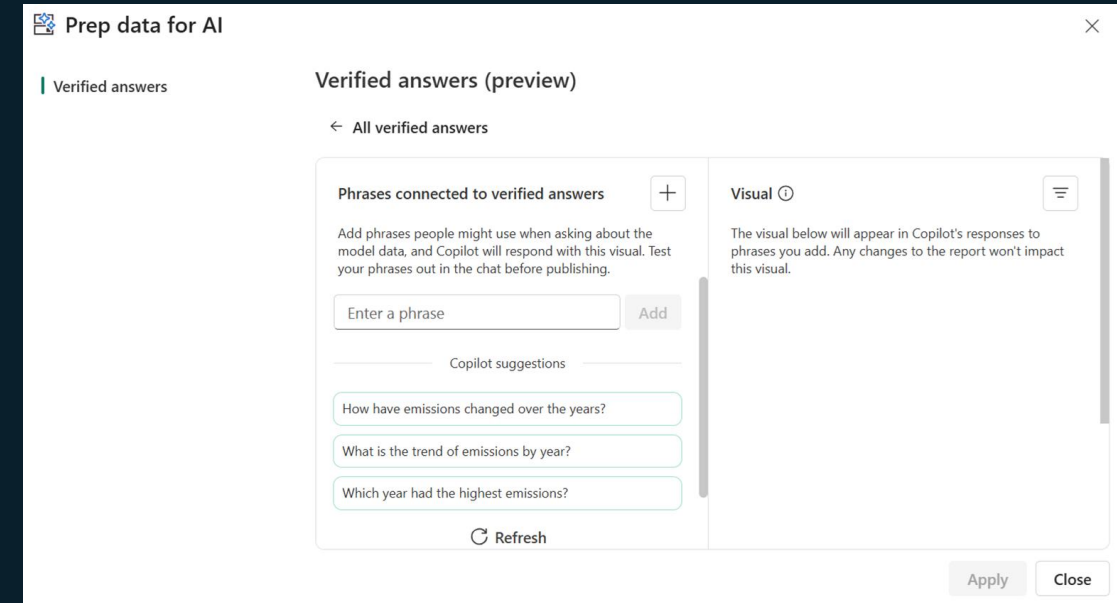
Shit In, Shit Out: If you're putting shit data into an experiment, you're going to get shit data out.

Your results are bubkes, what did you expect? SISO!

ud

Prep data for AI

- Strongly advised to use Semantic Models as source, as that's where business logic is added!
- Allows authors to define a dedicated schema for Copilot (Power BI Desktop only).
- Can link common questions to specific visuals in a report.
- Allows you to provide AI instructions.
- Unified "Prep with your data" experience.



Meet users where they are

Tools we use day in, day out



Meet users where they are



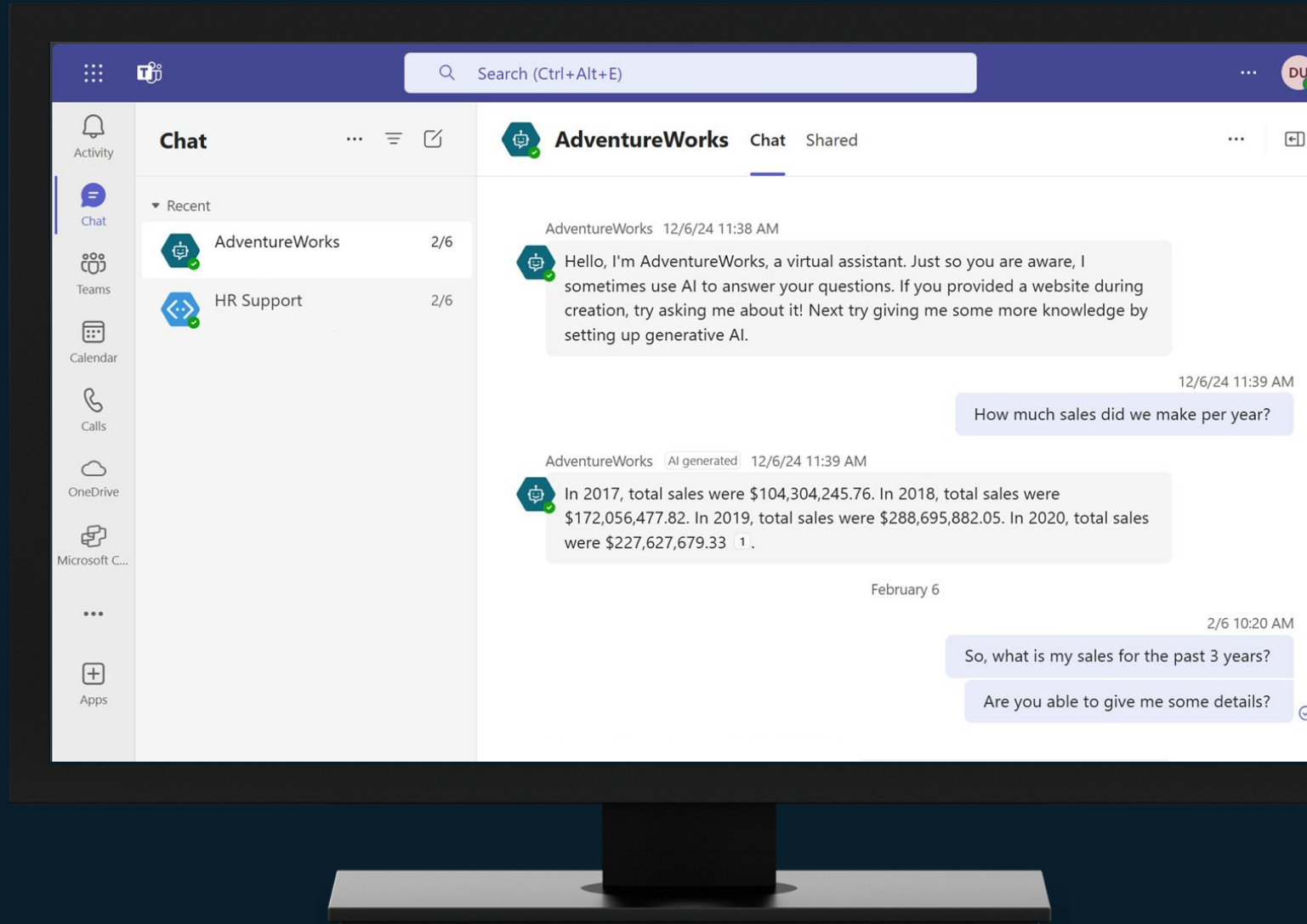
Using Copilot Studio (Power Platform) to build custom agents to do anything



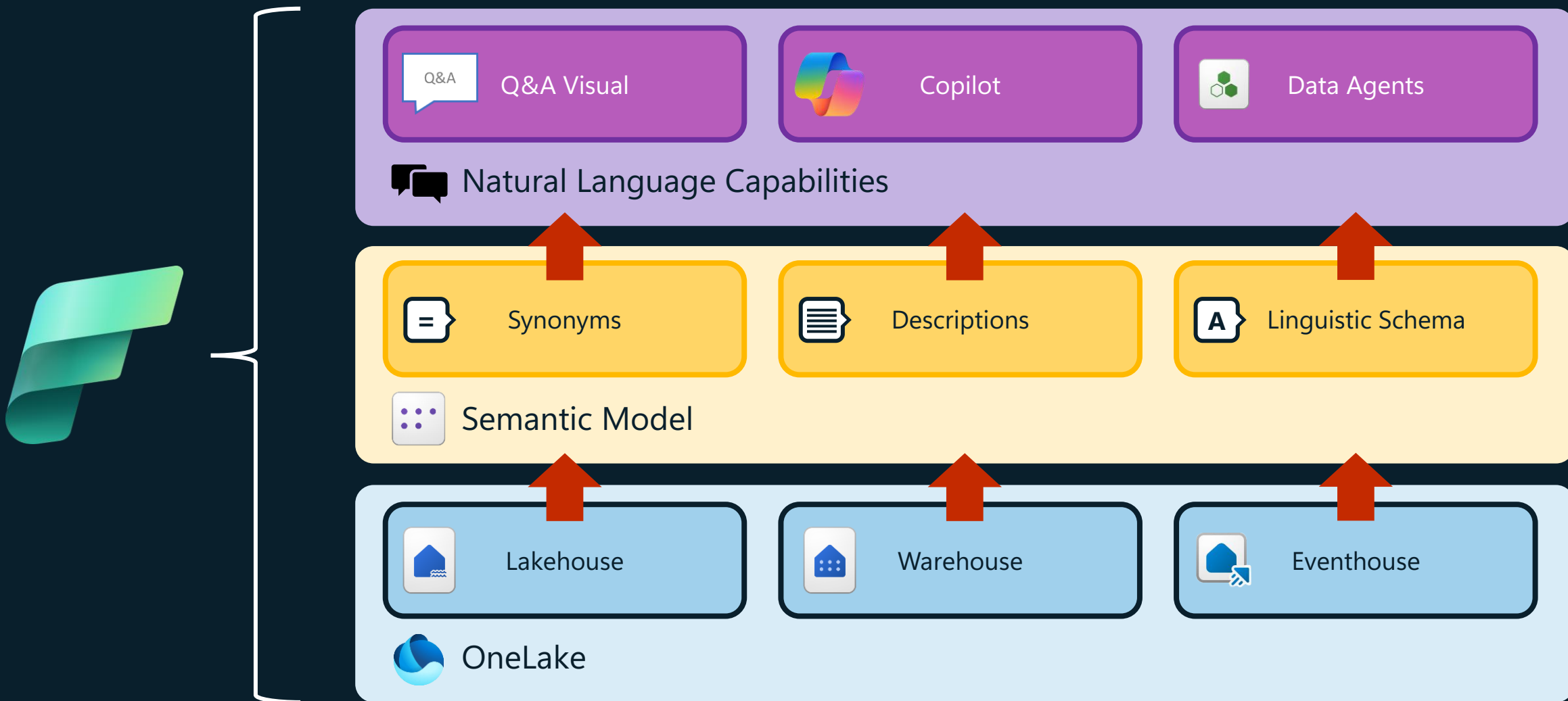
Use Fabric Data Agents as knowledge base



Integrate the agent into Microsoft Teams



Wrap up & take-aways



Key take-aways

Building a chat interfaces on top of your data

- A proper data foundation is key!
- Improve answer quality by using Semantic Models – including synonyms, descriptions and the linguistic schema

Data Agents (Data Agents) in Fabric

- ...allows for customization and training, compared to out of the box copilot
- ...only work on structured data (for now)
- ...generate NL2SQL, NL2KQL and NL2DAX
- ...loses accuracy if you use large schemas with dozens of tables

Copilot Studio / AI Foundry

- ...brings the experience to the users to meet them where they are
- ...has its own licensing structure

Most up to date list of limitations:

<https://learn.microsoft.com/en-us/fabric/data-science/concept-ai-skill>