Microsoft Ignite 2024

Data & AI

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Agents, agents, agents...

Copilot in Microsoft 365

- Pre-built agents

- Complexity: 1/5

- Customization: none

- Price: 30$ / user / month

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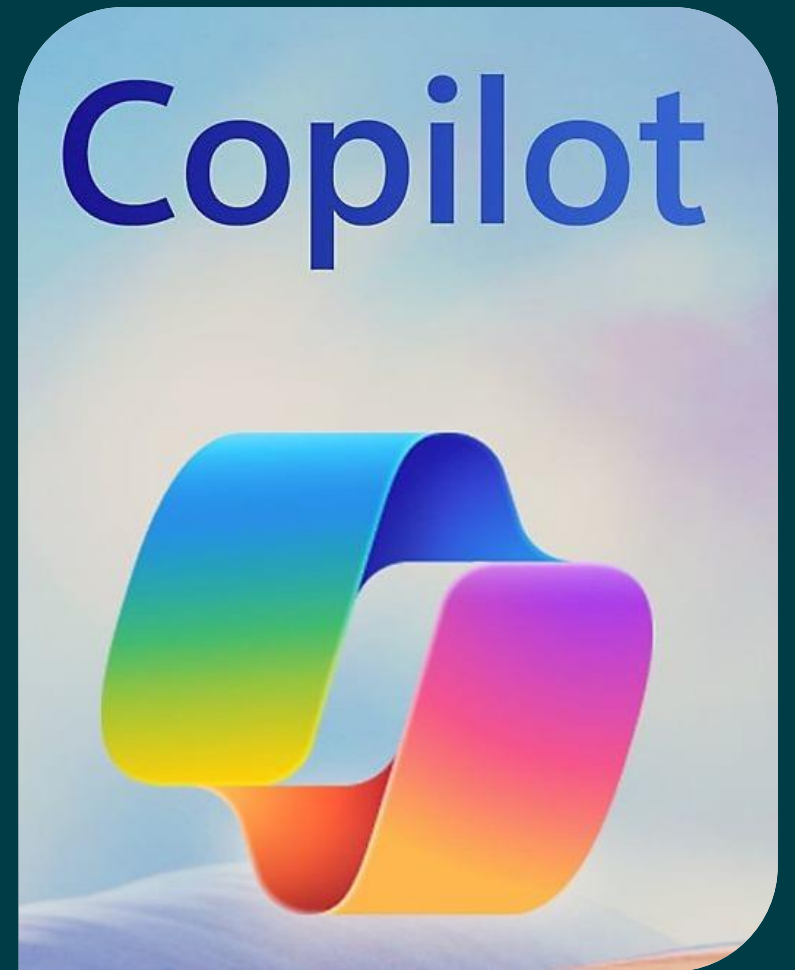
copilot.microsoft.com

Copilot in Microsoft 365 apps

10-12-2024   Wrap-up Ignite - Data & AI

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Demo: Copilot in Excel

Copilot in Microsoft 365 apps

- Pro's
  - Easy to get started
  - Easy to use
  - Heavily integrated
- Cons
  - Not configurable
  - Limited functionality
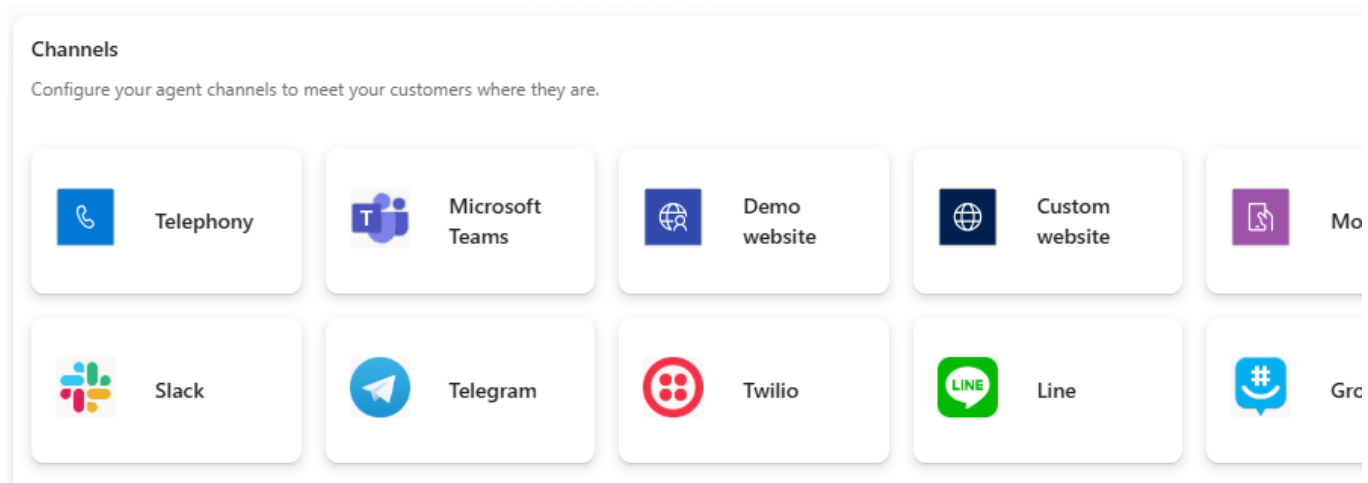

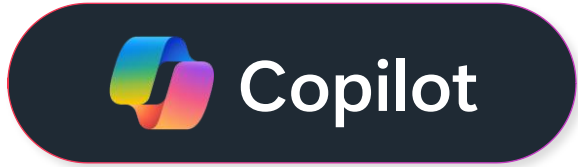**valid**

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Copilot studio

- Build custom agents

- Complexity: 2/5

- Customization: limited

- Price:
    - Included in Microsoft 365 Copilot
    - Pay-as-you-go ($0,01 / message)
    - $200 / 25k messages

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Why Copilot studio?

- Model instructions
  - Tell the model how to behave
- Knowledge
  - Tell the model what it knows
- Actions
  - Tell the model what to do

Channels

Configure your agent channels to meet your customers where they are.

| Telephony | Microsoft Teams | Demo website | Custom website | Mo |
| Slack | Telegram | Twilio | Line | Gro |

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Copilot

Every employee will have a Copilot

Your personal AI assistant for work

Grounded in work content like email, meetings & documents

The UI for AI

Agents

Every business process will have an agent

AI-powered system with actions, triggers & knowledge

Works on behalf of employees, teams & functions

Connected to Copilot or autonomous

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Demo: Copilot studio

Copilot studio

- Pro's
  - User friendly
  - Easy to get started
  - No-code

- Cons
  - No model selection
  - No model finetuning
  - No integration with custom software

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Azure AI Foundry

- Compare & tune models

- Complexity: 4/5

- Customization: high

- Price:
  - Based on Azure AI Services
  - Depends on model
  - Optionally extra costs for Azure AI Search

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Why Azure AI Foundry?

Scalability
Customization enables AI models to scale and adapt to specific enterprise needs.

Reducing hallucinations
Tailored models are less likely to produce inaccurate or irrelevant responses.

Increased reliability
Enhances the model's accuracy for domain-specific tasks.

Improved efficiency
Customization ensures faster and more precise results, saving time and resources.

Tailored solutions
Models are fine-tuned for specific use cases, providing more relevant and context-aware outcomes.

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Gen AI journey

Plan an iterative path from basic to advanced GenAI leveraging your data

Prompt engineering

Retrieval augmented generation (RAG)

Fine-tuning

Pre-training

Crafting specialized prompts and pipelines to guide model behavior

Combining an LLM/SLM with your enterprise data

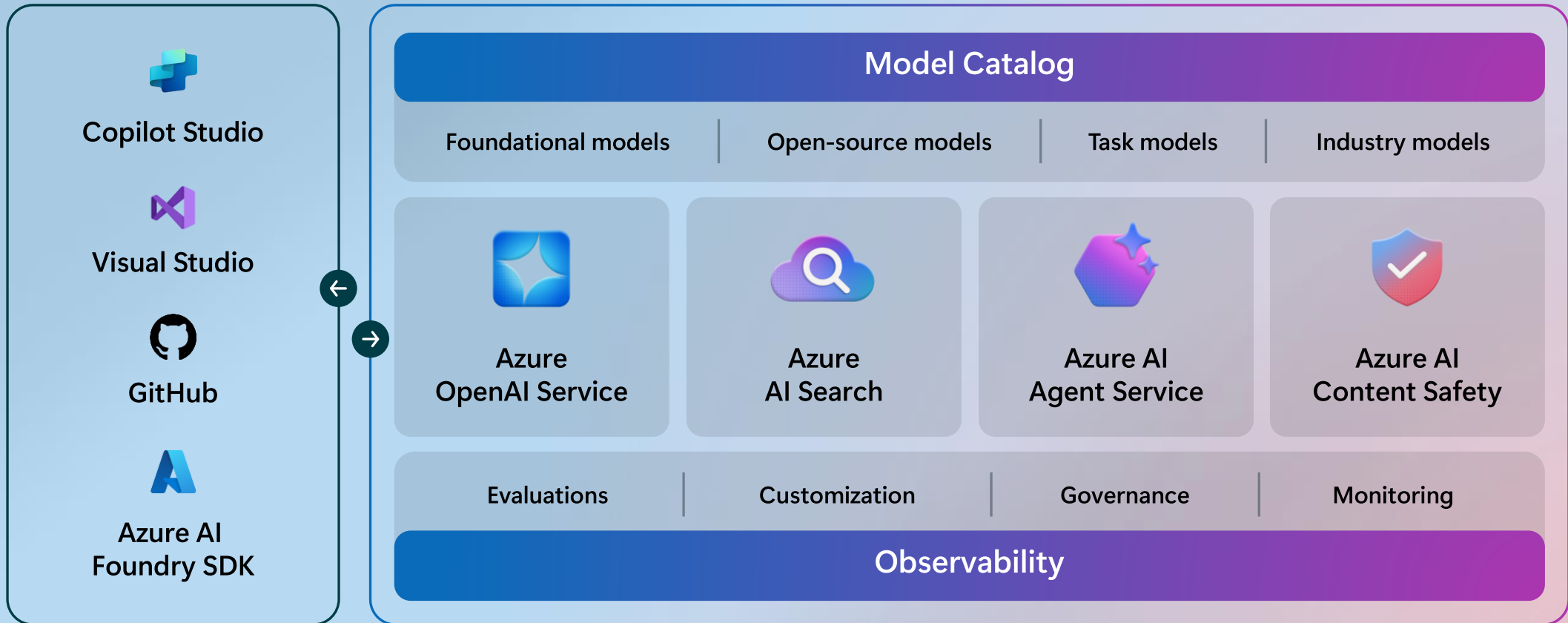Adapting a pre-trained Gen AI model to specific datasets or domains

Training a GenAI model from scratch

Accuracy / Complexity / Compute-Intensive

Azure AI Foundry

Copilot Studio

Visual Studio

GitHub

Azure AI
Foundry SDK

Model Catalog

| Foundational models | Open-source models | Task models | Industry models |

**Azure
OpenAI Service**

**Azure
AI Search**

**Azure AI
Agent Service**

**Azure AI
Content Safety**

| Evaluations | Customization | Governance | Monitoring |

Observability

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Azure AI Foundry

- Pro's
  - Highly customizable
  - Easy to get started
  - Easy to integrate with other software
  - Supports no-code and pro-code
- Cons
  - No easy way to compare models
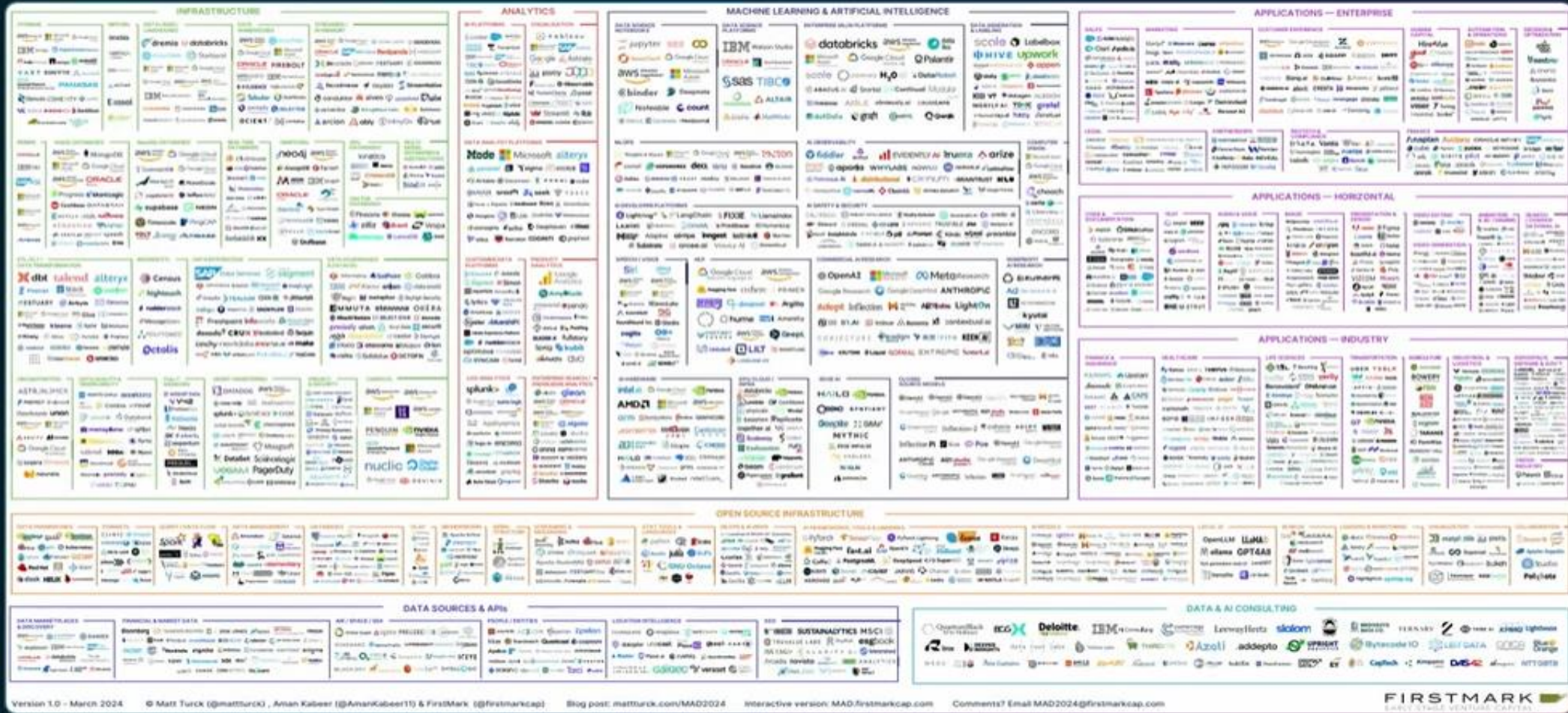 - Limited availability
  - More infrastructure to manage

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Different solutions

- Different goals

- Different target audience

Microsoft Fabric

"Data is the fuel that Powers AI"

The 2024 data and AI landscape

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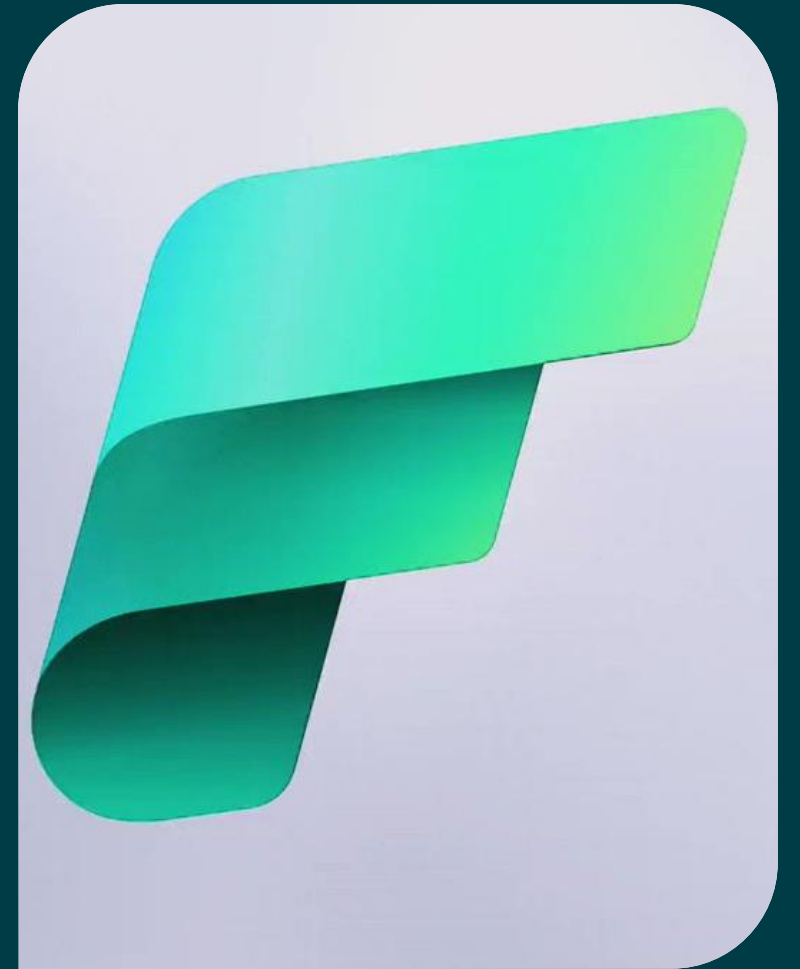
Microsoft Fabric

- Three major trends:

1. Maturity of Fabric

2. Fabric and Translytic solutions

3. AI and Co-Pilot

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Maturity of Fabric

- Real-time intelligence

- SQL database

- Onelake Catalog

- Fabric security and governance

- Industry solutions

- Partner workloads

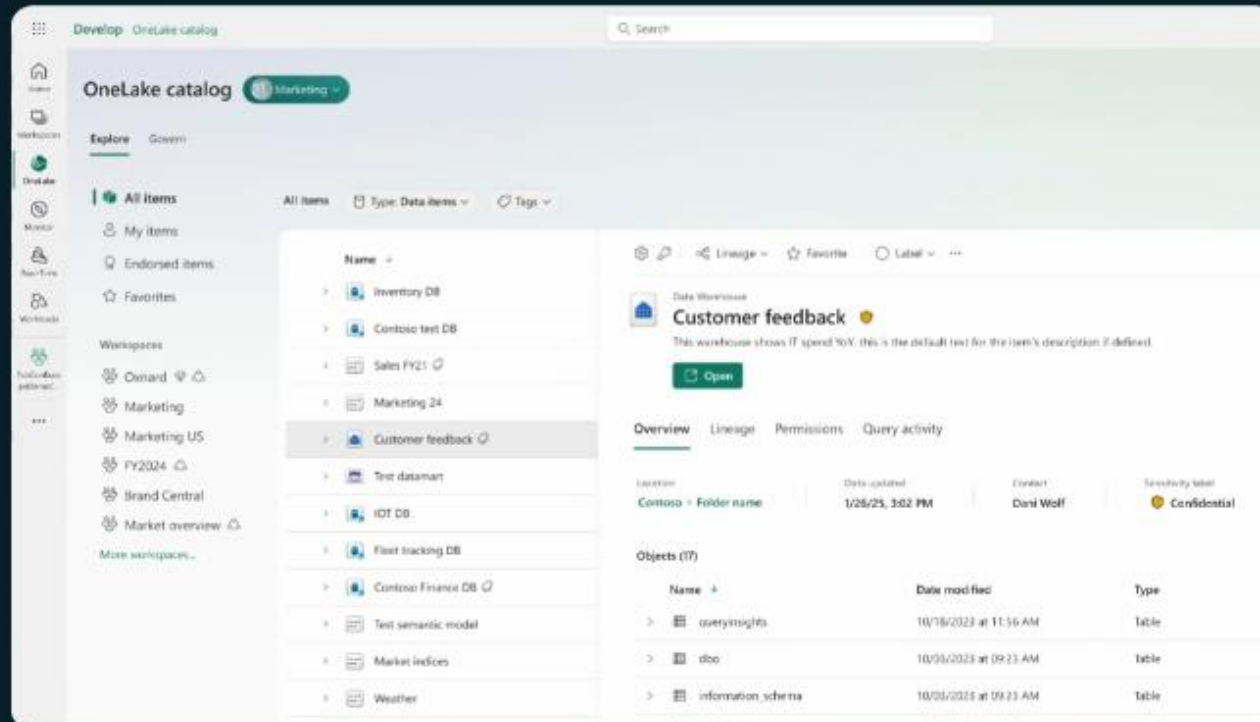

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OneLake data available everywhere

OneLake catalog

Generally Available

Unified view of org data estate to boost discovery & collaboration on data, processes, insights, and AI

Easily explore & manage your data in place including item details, lineage, refreshes, and more

Effectively govern your data at scale with insights, recommended actions, and tooling (review)

Integrated directly into Microsoft365, Microsoft Copilot Studio, and Azure portal experiences

Database Mirroring in Fabric

Automatically reflect data into OneLake

Snowflake

Mirroring for
Snowflake

Mirroring for
Azure SQL DB

Mirroring for
Cosmos DB

Mirroring for
Azure SQL MI

Mirrored Azure
Databricks Catalog

Coming Soon

Mirroring for
SQL Server

Mirroring for SQL
Server 2025

Mirroring for
Azure PostgreSQL

Mirroring for
Oracle

Open Mirroring in Fabric

Public Preview

Mirrored Database Item

Landing Zone → CDC Processing → Tables

A new capability in Fabric to enable any applications to integrate data into OneLake via Mirroring

Open Mirror enables landing data via API or manually via drag-and-drop in the UX

Simplifies building custom mirroring solutions and handling of complex data changes, ensuring that all mirrored data is continuously up-to-date and ready for analysis

Shipped

Network Security

GA

Entra conditional access
Service tags
User audit logs
Enterprise data gateway
VNET Data Gateway Support with Private Links for Dataflows Gen2
Private endpoint, tenant level
Shortcuts for ADLS Gen2 in VNET
Spark connectivity to Azure data services in a VNET

Data Security

GA

Workspace roles
SQL Object-level security
SQL Column-level security
SQL Row-level security
SQL Dynamic data masking
SQL granular permissions
Lockbox
Fabric workspace identity for data source authentication

Governance

GA

Information protection
Sensitivity labels
Purview Audit
Endorsement
Lineage
Impact analysis
Domains & Sub Domains
Metadata scanning
Resiliency
Purview data catalog

Public preview

Admin Monitoring and Insights
Fabric Monitoring

Coming next

Public preview

Private endpoint, workspace level
Data exfiltration protection, workspace level for Spark
IP firewall filtering, workspace level

Public preview

Encryption using Customer Managed Key for OneLake
Data Loss Prevention policies for Lakehouse
MIP protection policies for Fabric items

Public preview

Domains enhancements (delegation, policies, consumption)

aka.ms/FabricSecurityWhitepaper

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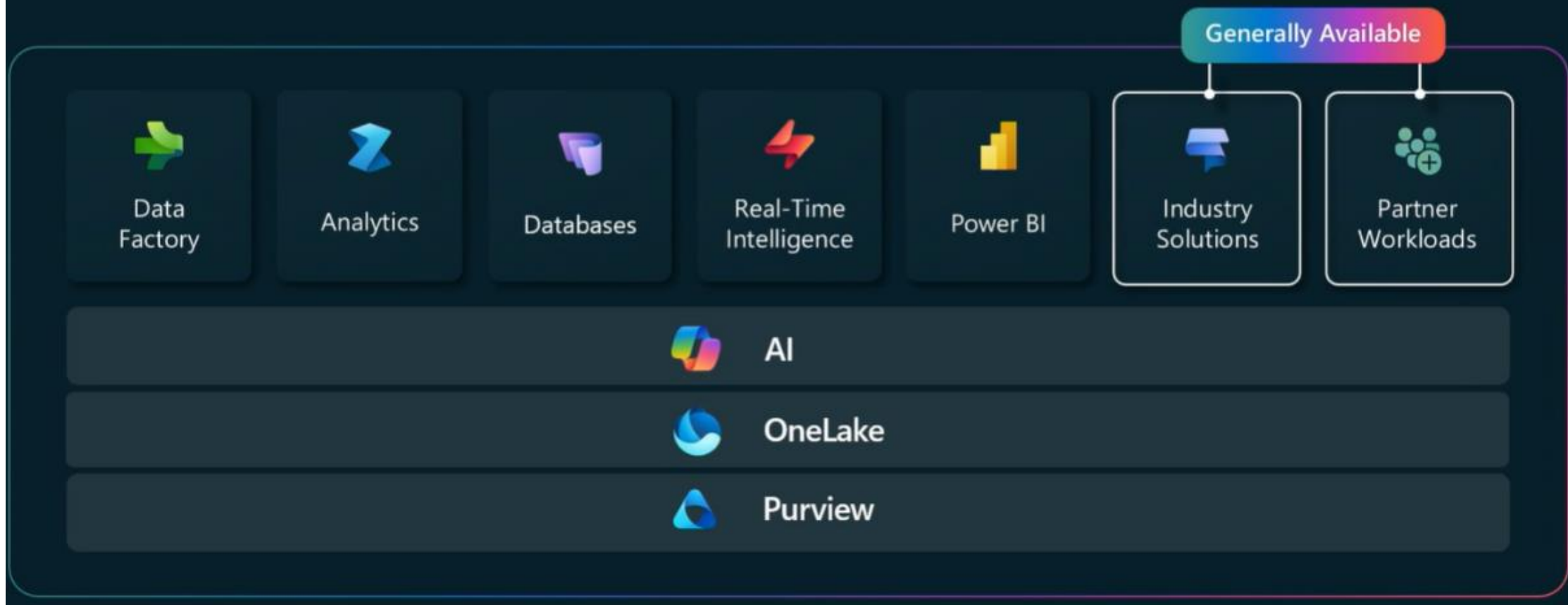
Industry solutions and Partner workloads

- Industry solutions
  - Manufacturing data solutions
  - Retail data solutions
  - Sustainability data solutions
  - Healthcare data solutions

- Partner workloads:
  - Examples:
    - Databricks
    - Snowflake
  - Fabric workload development kit available

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Sustainability data solutions in Fabric

Environmental data and insights

Build environmental footprint for carbon, water, waste, etc. from data of 3P/1P systems like MSM.

Social and governance insights

Build social and governance insights from data of business systems like HRM, training, etc.

Environmental, Social, and Governance Metrics

Compute, visualize, and analyze ESG metrics for regulatory standards like EU CSRD.
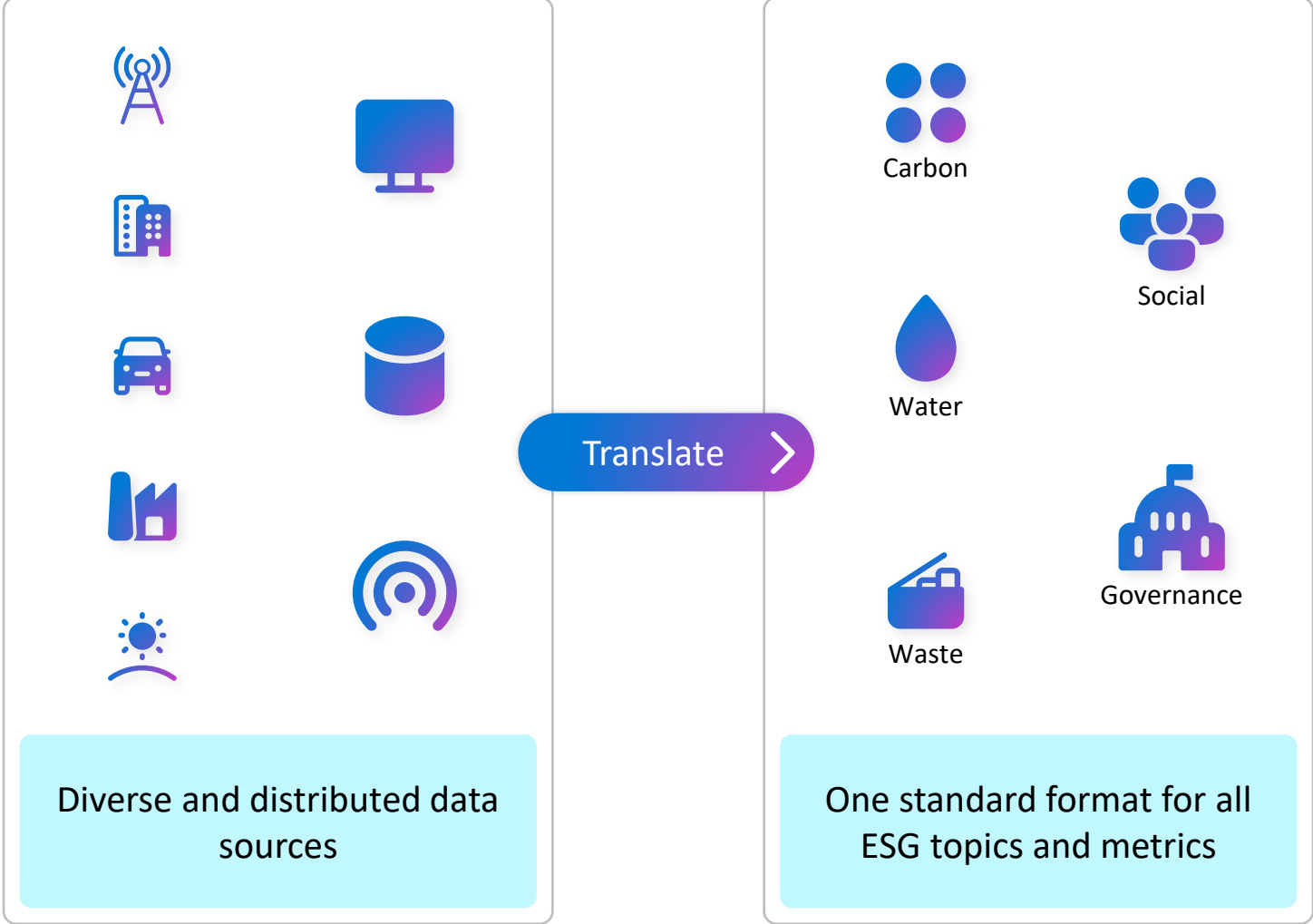
Microsoft Azure emissions insights

Report and analyze Azure emissions by collecting and processing the emissions data.

ESG Data Estate

One sustainability data lake with standardized and unified sustainability data.

Sustainability data translation

Translate ⟩

Carbon

Water

Waste

Social

Governance

Diverse and distributed data sources

One standard format for all ESG topics and metrics

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Fabric joins TRANSactional and anaLYTICAL to Translytical

- Fabric databases
- Translytical apps

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SQL database in Fabric

SQL database in Fabric
Build AI apps faster and easier than ever

Simple	Autonomous and secure	Optimized for AI

Built upon the familiar SQL Server/Azure SQL Database engine, in Microsoft Fabric

Translytical apps
in Fabric

Sneak Peek

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Fabric and AI working seamlessly together

Copilot built into every workload

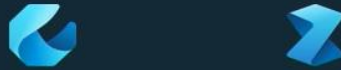| Public Preview	Public Preview	Public Preview	Public Preview	GA	GA
Data Factory	**Data Warehouse**	**Data Engineering & Data Science**	**Databases**	**Real-Time Intelligence**	**Power BI**
Get intelligent code generation to transform data with ease and code explanations to help you better understand 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.

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AI Skill in Microsoft Fabric

Deliver custom generative AI experiences for **your data** with **AI Skill**
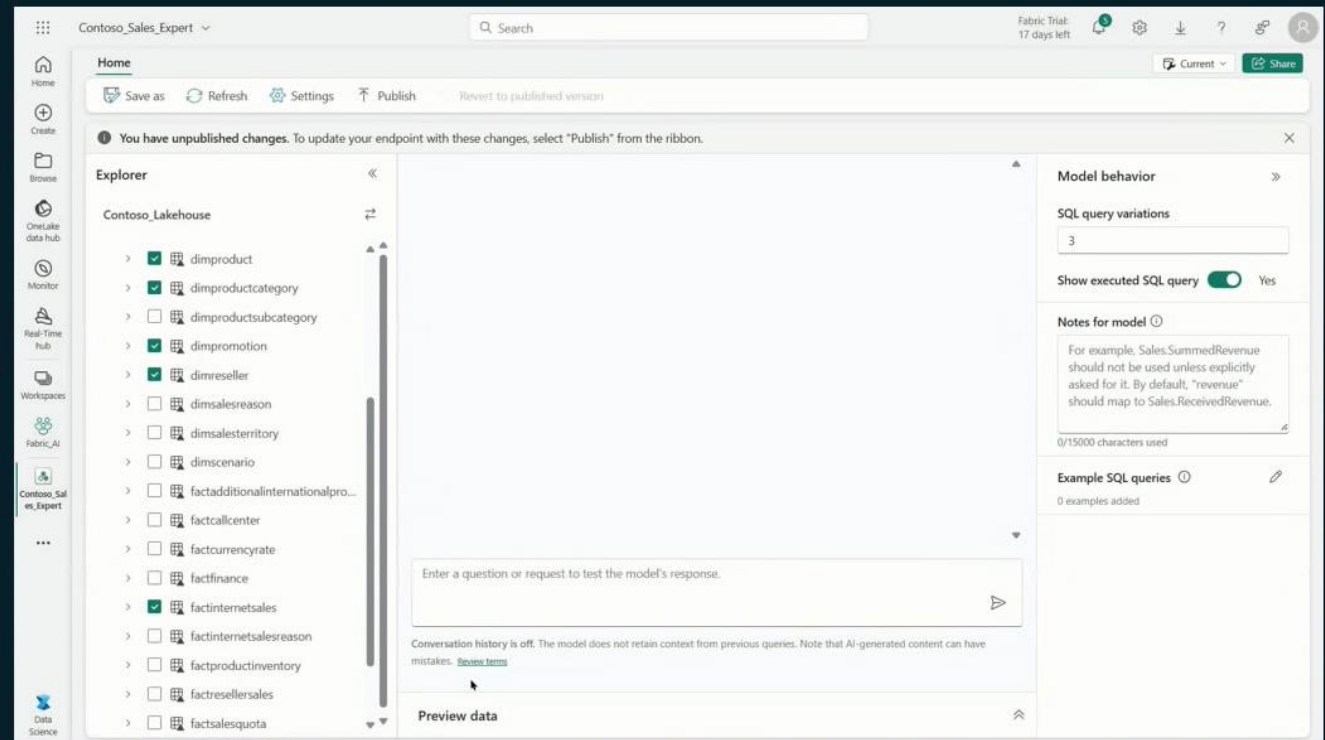

💬 Allow your users to talk to data in Fabric

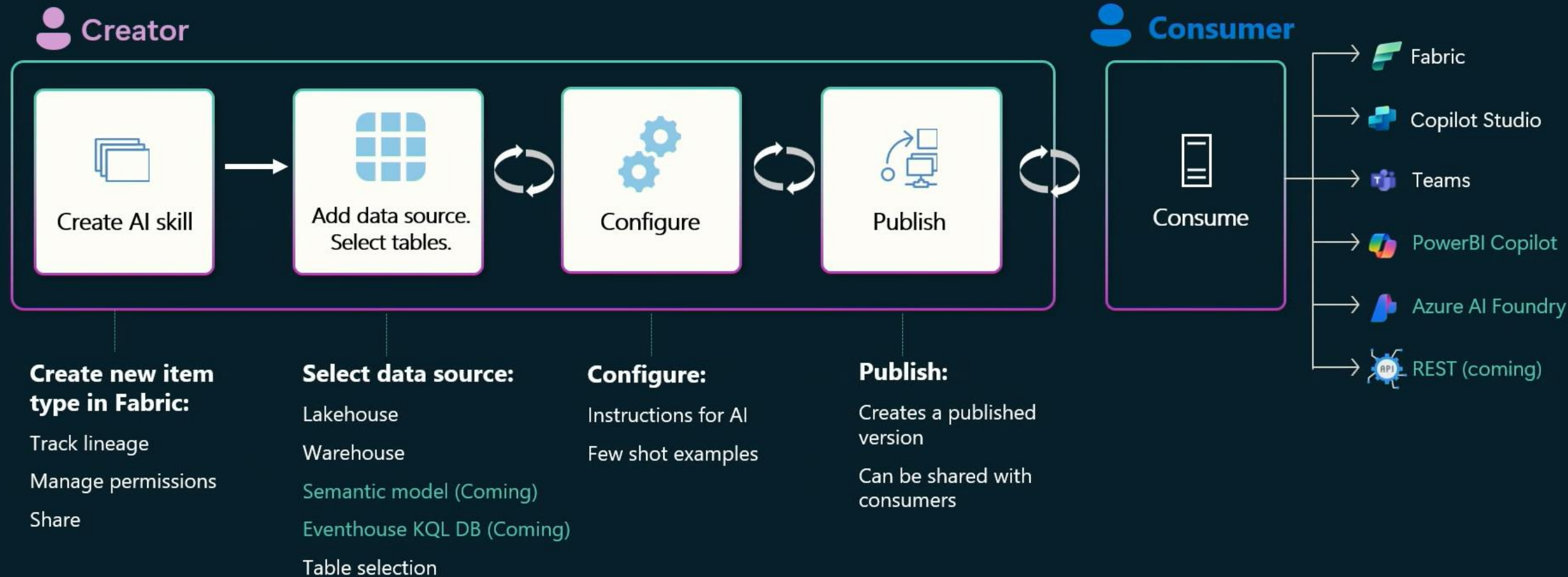✨ Create, curate and configure a **data expert** on your data domain

👥 Share AI skills with other creators and consumers in Fabric

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AI skill end-to-end flow

End-to-end scenario

Creator

Create AI skill → Add data source. Select tables. ⇄ Configure ⇄ Publish ⇄

Consumer

Consume

→ Fabric
→ Copilot Studio
→ Teams
→ PowerBI Copilot
→ Azure AI Foundry
→ REST (coming)

Create new item type in Fabric:

Track lineage

Manage permissions

Share

Select data source:

Lakehouse

Warehouse

Semantic model (Coming)

Eventhouse KQL DB (Coming)

Table selection

Configure:

Instructions for AI

Few shot examples

Publish:

Creates a published version

Can be shared with consumers

Thanks!

- Aucke Bos
- Consultant Data & AI
- Aucke.Bos@valid.nl

- Joost Wijdeven
- Senior BI Consultant
- Joost.Wijdeven@valid.nl

- Olivier Giraud
- Principal Consultant
- Olivier.Giraud@valid.nl

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