

DATA+AI
SUMMIT 2022

How to Implement a Semantic Layer for your Lakehouse

Make Your Data Speak the
Language of Your Business



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ORGANIZED BY  databricks

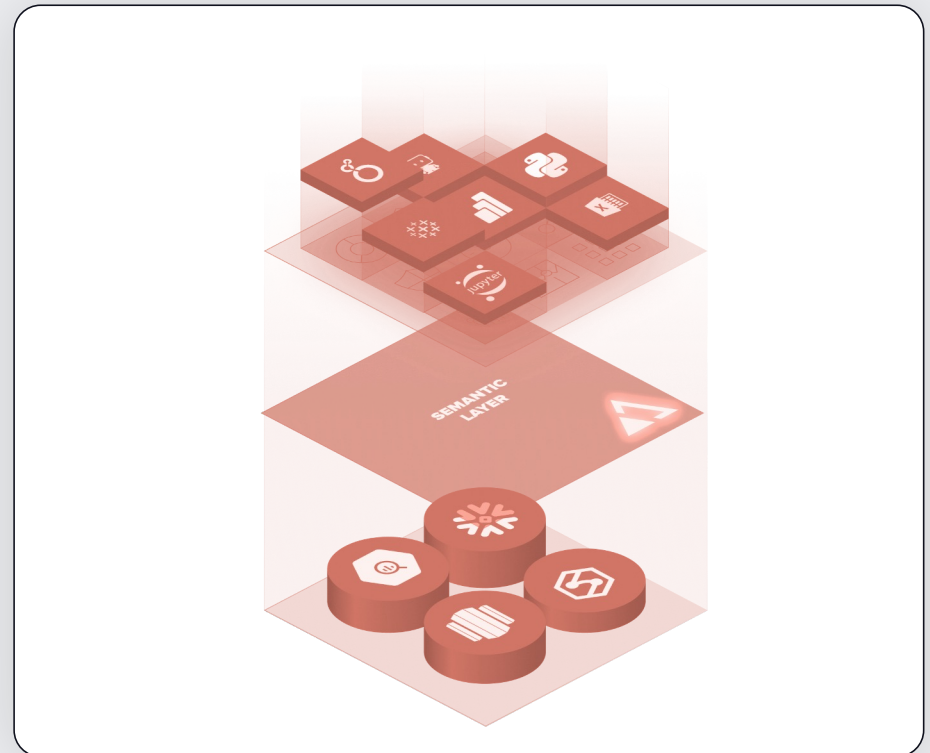
“A semantic layer is a **business representation** of corporate data that helps end users access data autonomously using **common business terms.**”

Semantic Layer - Wikipedia

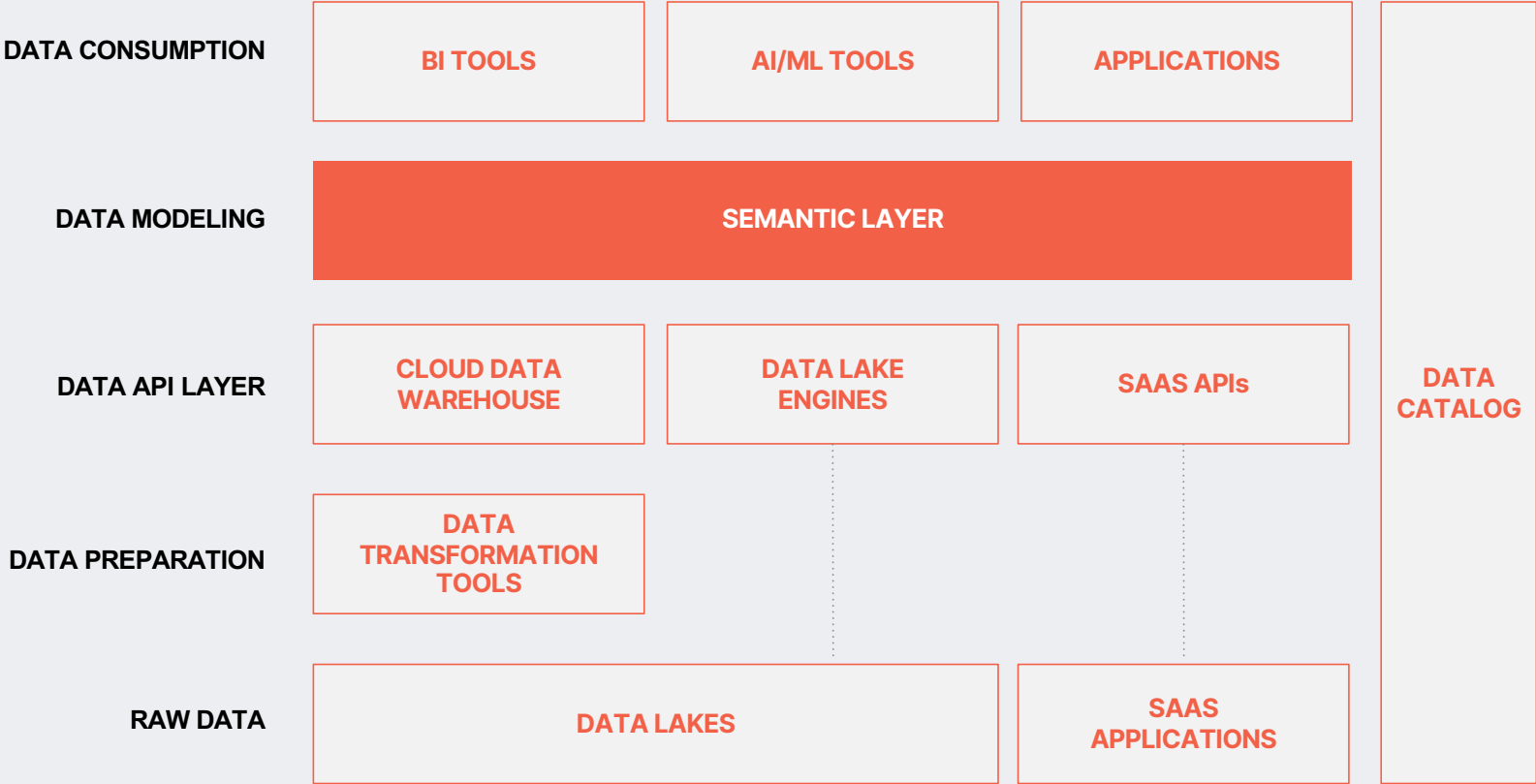
https://en.wikipedia.org/wiki/Semantic_layer

What does a semantic layer do?

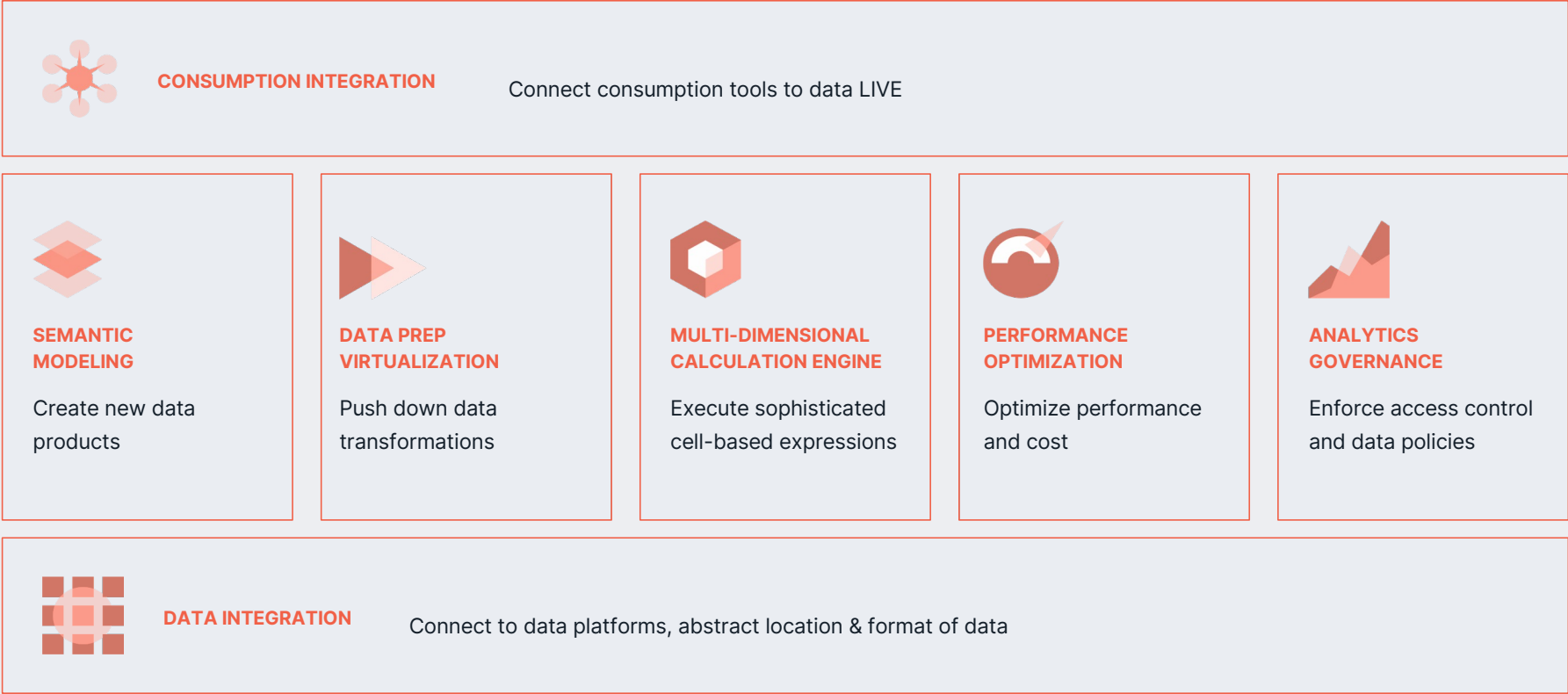
A semantic layer provides the **agility, consistency, and control** needed to scale enterprise BI and AI



Where does a semantic layer fit?



What does a semantic layer do?



What does a semantic layer look like?

The image displays five different semantic layer interfaces side-by-side, each representing a different tool:

- ATSCALE:** Shows a hierarchical view of data fields under 'Internet Sales'. It includes folders for Dimensions (Customer Attributes, Date Attributes, Orders, Product Attributes) and Measures (Customer Metrics, Product Metrics, Sales Metrics). Specific measures listed include Calculated Tax, Max Tax Amount, Order Quantity, Sales Amount, Sales Amount Avg, Sales Amount SStdev, and SoldProductNDC.
- Tableau:** Shows a similar hierarchical view with a search bar and filter options. It lists folders like Customer Attributes, Customer Metrics, Date Attributes, Orders, Product Attributes, Product Metrics, Sales Metrics, and Time Relative. The Sales Metrics folder contains the same list of measures as ATSCALE.
- Excel:** Shows the 'PivotTable Fields' task pane. It has a search bar and a list of fields to add to a report, including Internet Sales, Customer Metrics, Product Metrics, Sales Metrics, and Time Relative. The Sales Metrics folder is expanded to show the same list of measures.
- Power BI:** Shows a list of fields under 'Internet Sales'. It includes folders for Customer Metrics, Product Metrics, Sales Metrics, and Time Relative. The Sales Metrics folder is expanded to show the same list of measures.
- Looker:** Shows a list of fields under 'All Fields'. It includes folders for DIMENSIONS (Color, Customer Attributes, Customer Dimension, Order Time YQMD, Order Time YWD, Product Dimension, Product, Ship Time YQMD, Ship Time YWD) and MEASURES (Sales Metrics). The Sales Metrics folder is expanded to show Average Sale Price and Customer Count Estimate.

Red arrows point from the ATSCALE interface to the Tableau, Excel, and Power BI interfaces, suggesting a comparison or mapping of the semantic layer across these tools.

How is a semantic layer used?

Use Cases

METRICS STORE

Single source of governed enterprise metrics that can be self-served from any AI/BI tool.

OLAP MODERNIZATION

Migrate legacy OLAP (e.g. SSAS) models to modern cloud-first infrastructure.

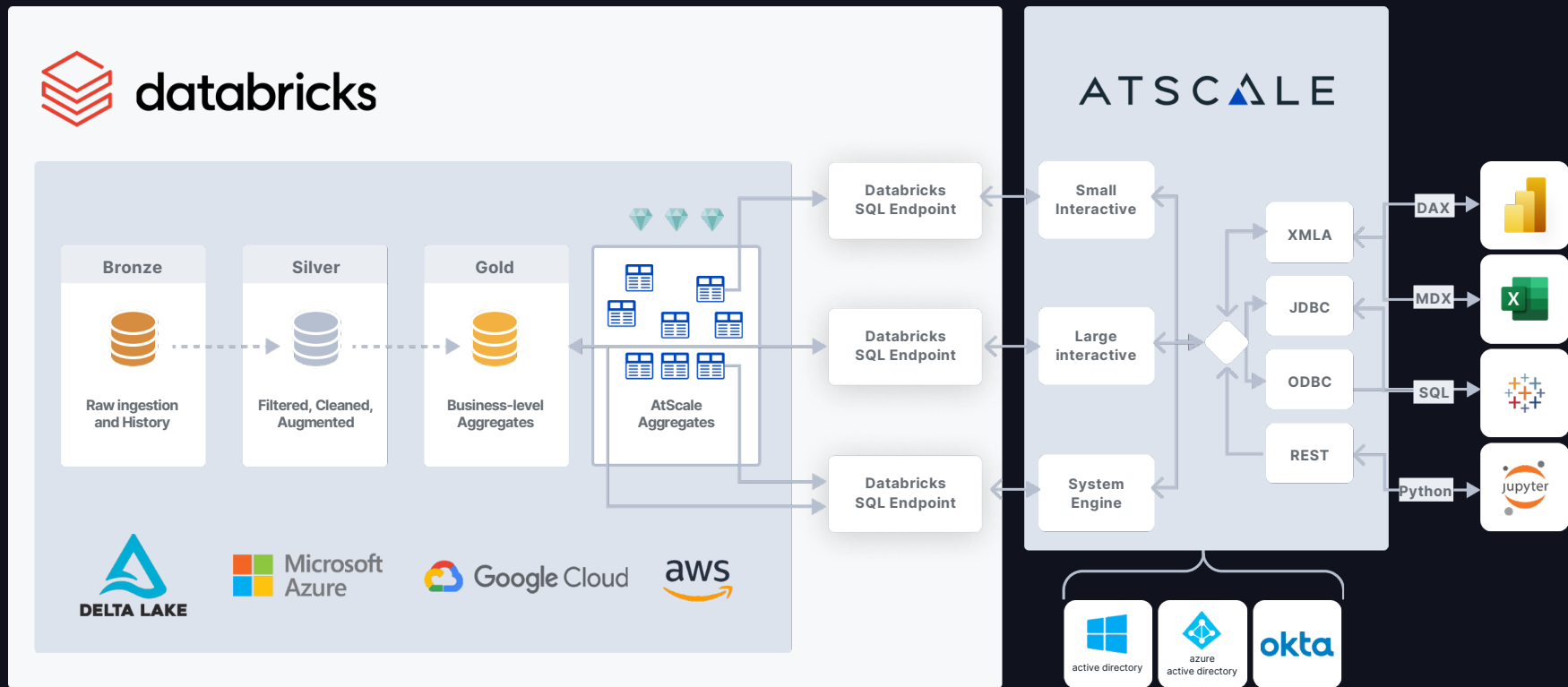
BRIDGING AI AND BI

Common view of data assets and platform for publishing AI-generated insights to decision makers.

CLOUD OPTIMIZATION

Speed of thought analytics on live cloud data, agile data integration with minimal data movement.

How to deploy a semantic layer



Demo

Why Databricks & a Semantic Layer?

The Semantic Lakehouse

1. Intelligently leverage Databricks for Self Service BI use cases, eliminating the need for a BI serving layer
2. Deliver a semantic layer (“Semantic Lakehouse” or “Diamond Layer”) for analysis ready data across popular BI, Data Science, and ML services
3. Migrate & modernize legacy cubing technologies like Cognos, SSAS, BO etc. to a Lakehouse

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Thank you



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