ATSCALE

How a Semantic Layer Makes Data Mesh Work at Scale

Dataversity

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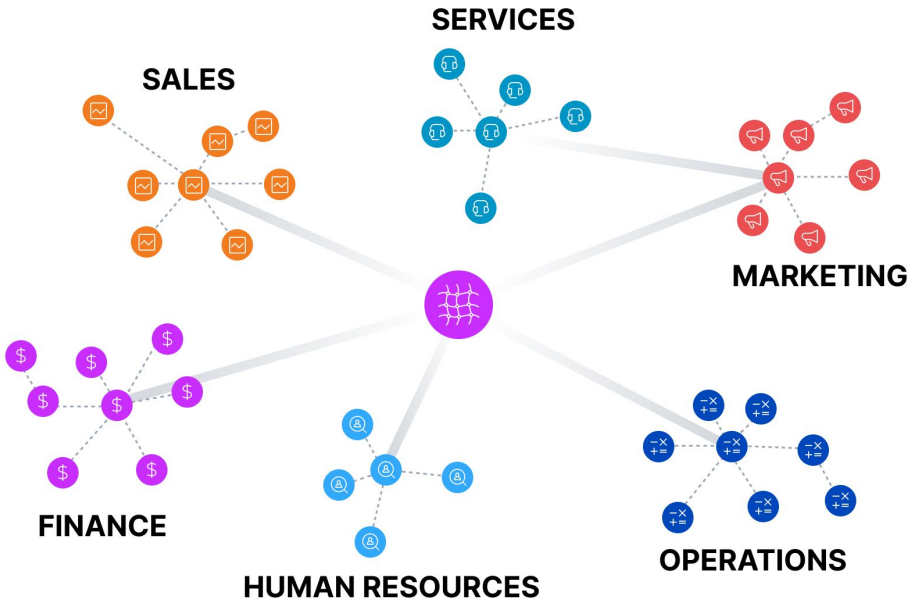
Data Mesh

The data mesh is an approach to building a decentralized analytics architecture where **business domains** are responsible for their data – giving ownership to the group that's closest to and best understands the data.

Successful data mesh requires:

- Flexibility and agility
- Governance and single version of truth
- Abstract technical complexity

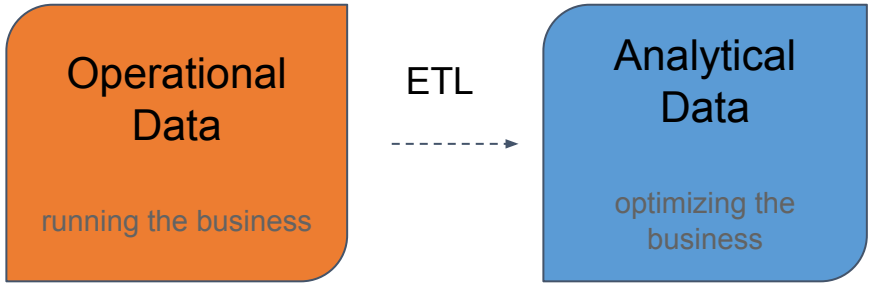


Data Types

Captures current state of applications

Transactional

Optimized for application logic

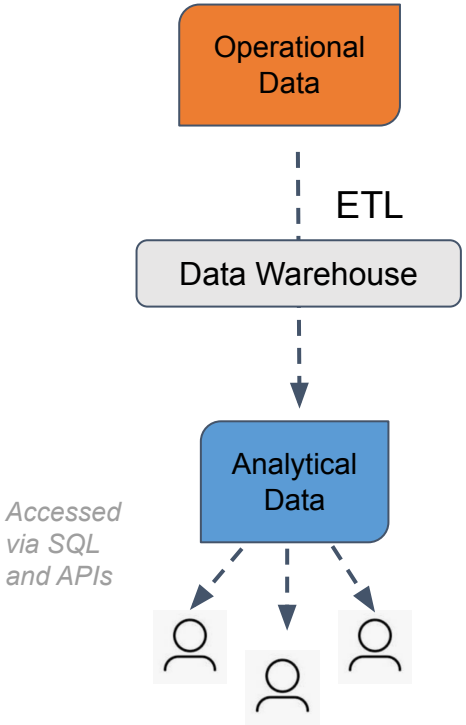


Optimized for analytics

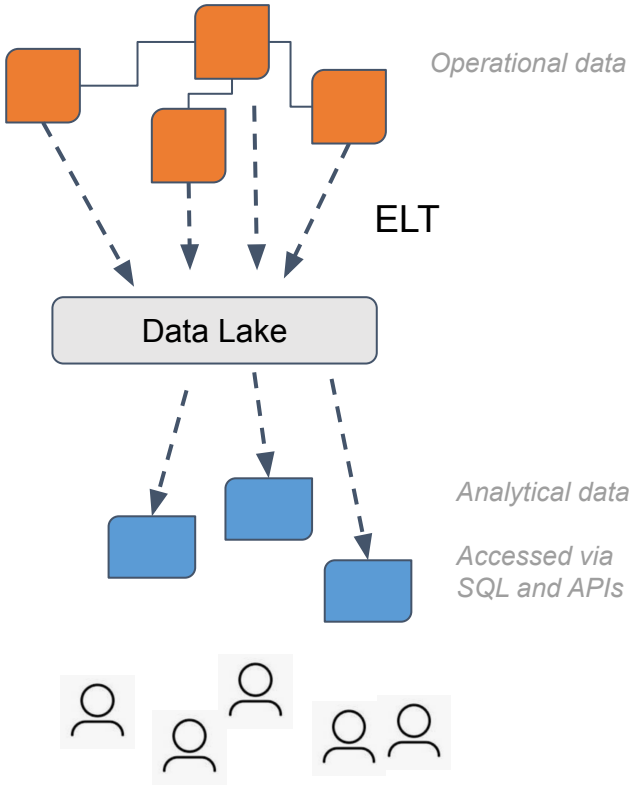
Multi dimensional analysis, breakdown, KPIs, ML training

Historical

The data journey…



Data Warehouse

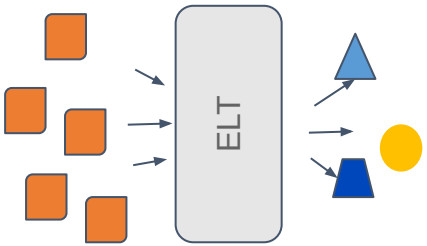


Data Lake

Low analytics adoption and fractionated data driven decisions

1

Centralized and Monolithic



Raw → Analytics

2

Hyper-specialized Silo

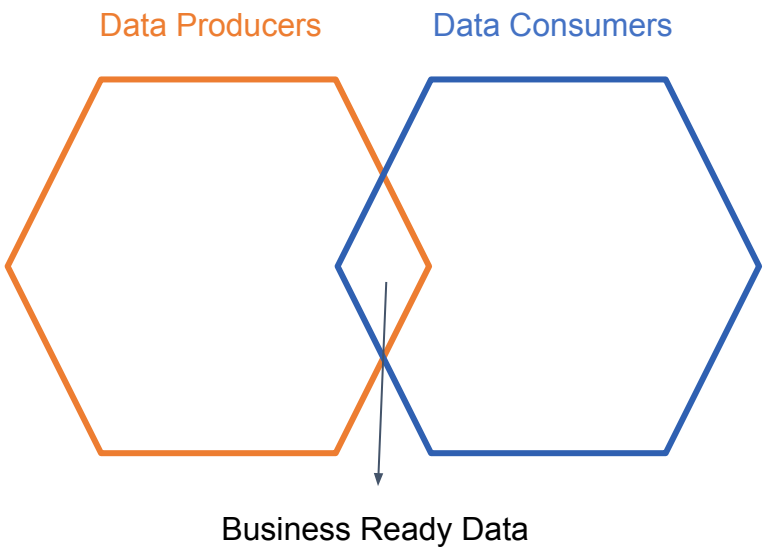
Data engineers | Data stewards | Business users

3

Flexibility and Agility

Business moment

The gap between analytics data and business ready data



Business ready data is the final transformed version of the data that has timely business logic and business context applied, that provides the right insights to the right user at the right time.

Raw → Analytics ready → Business ready

Achieving business ready data with semantic layer

1

Decompose data around domains

Distribute the ownership with governance

2

Serve data as a product

Delight the consumer with ease of data discovery and use

3

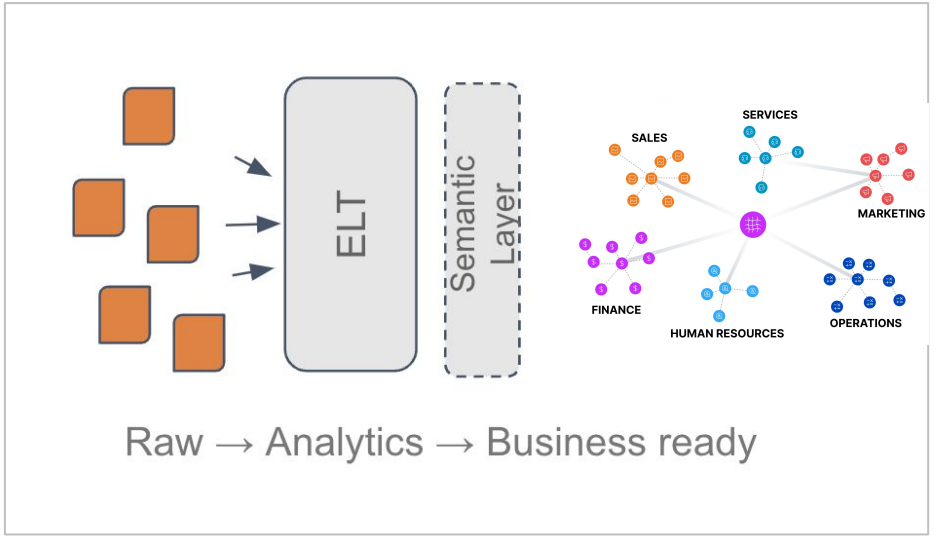
Enable Autonomy

Abstract technical complexity

4

Build an Ecosystem

Federated and global governance



The “dinosaur” in the room

A semantic layer is **a business representation of corporate data that helps end users access data autonomously using common business terms**. A semantic layer maps complex data into familiar business terms such as product, customer, or revenue to offer a unified, consolidated view of data across the organization.

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

Semantic layer - Wikipedia

Why Semantic Layer for Data Mesh?

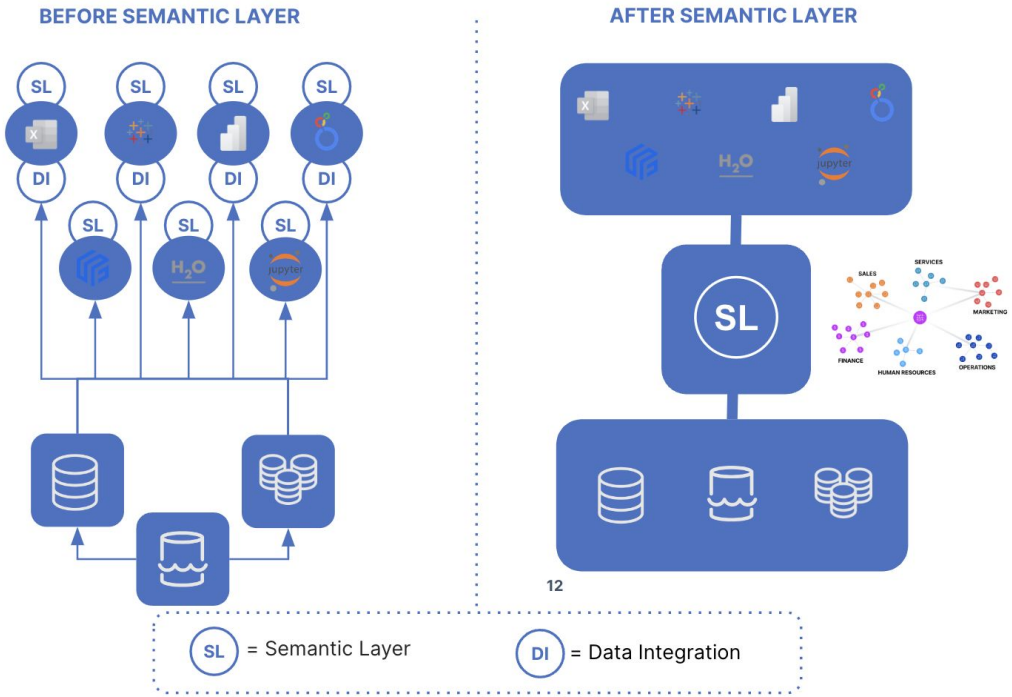
Distributed ownership with governance

Domain data owners achieve:

- centralized place for decentralizing data for their domains.
- Federated governance and ecosystem.

Data consumers benefit:

- Trusted, single version of truth.
- Ease of data discovery and use with their analytics tool of choice.
- Abstraction from technical complexity with business ready context.



Capabilities of a semantic layer that are fundamental to data mesh success

- It manages the translation of analytics-ready to business-ready data by enabling the data to speak the language of your business.

- It simplifies the creation of new business-ready views with pre-built, composable building blocks.

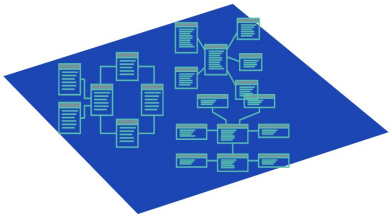
- It is the logical place to apply governance policies that form the guardrails on data usage, ensuring consistency, compliance, and trust.

Key capabilities

1

Practical and agile approach to **semantic modeling**

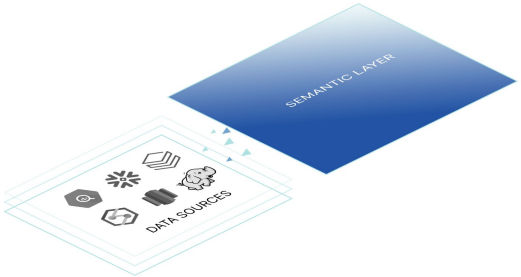
- Dimensional analysis
- Different modeling personas
- Composability with conformed dimensions



2

The power of providing **centralized governance**

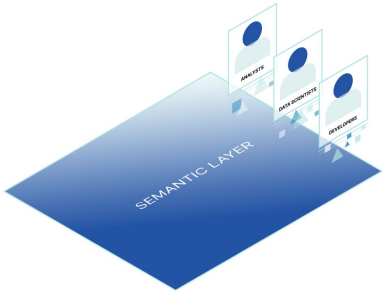
- High performance
- Cost and Performance governance
- Consistency of metrics, dimensions, models



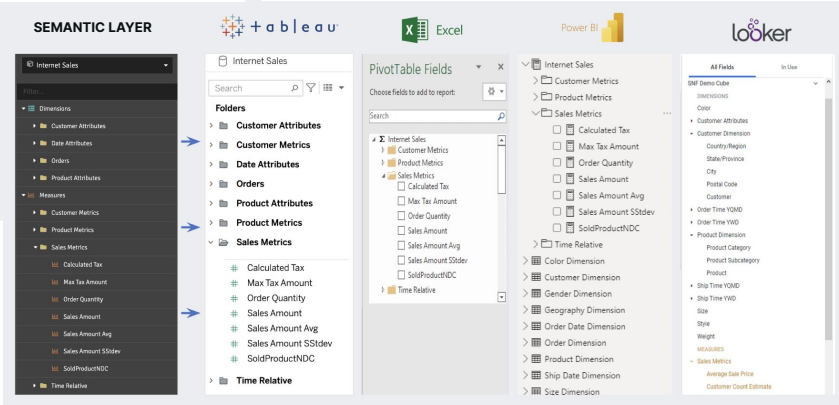
3

The opportunity to create **de-centralized data products**

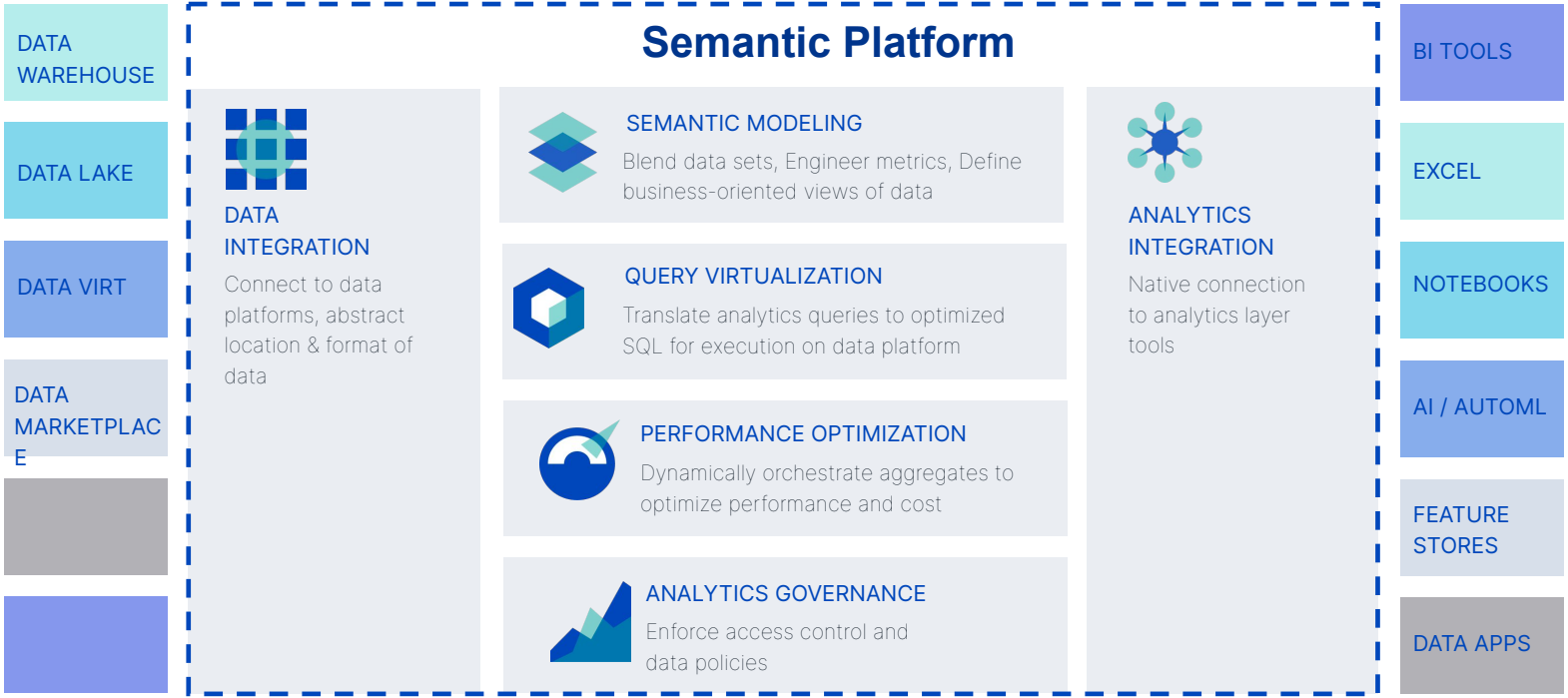
- Excel for financial analysts and ad-hoc analysis
- PBI/Tableau/Looker for interactive dashboards
- Python for data science



Semantic Platform Deployment

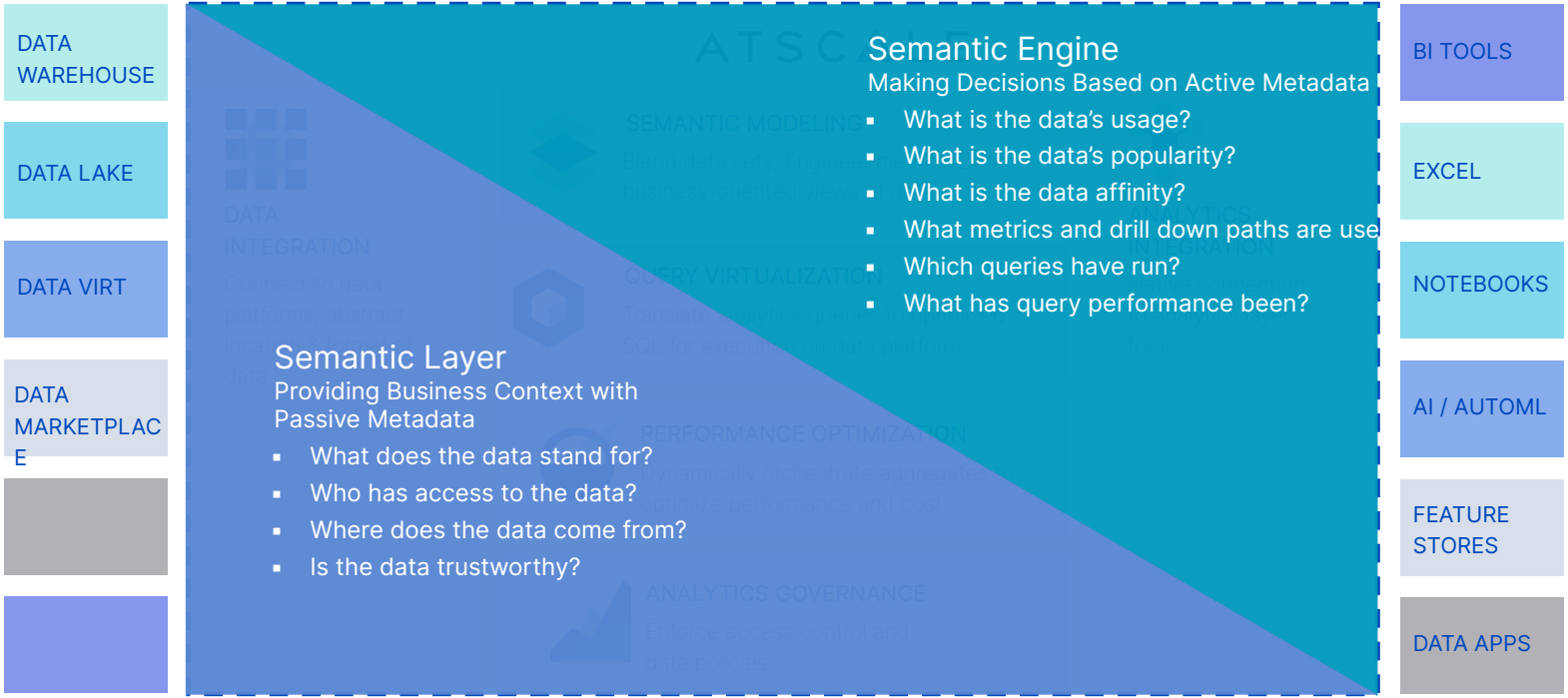


Semantic Layer Platform

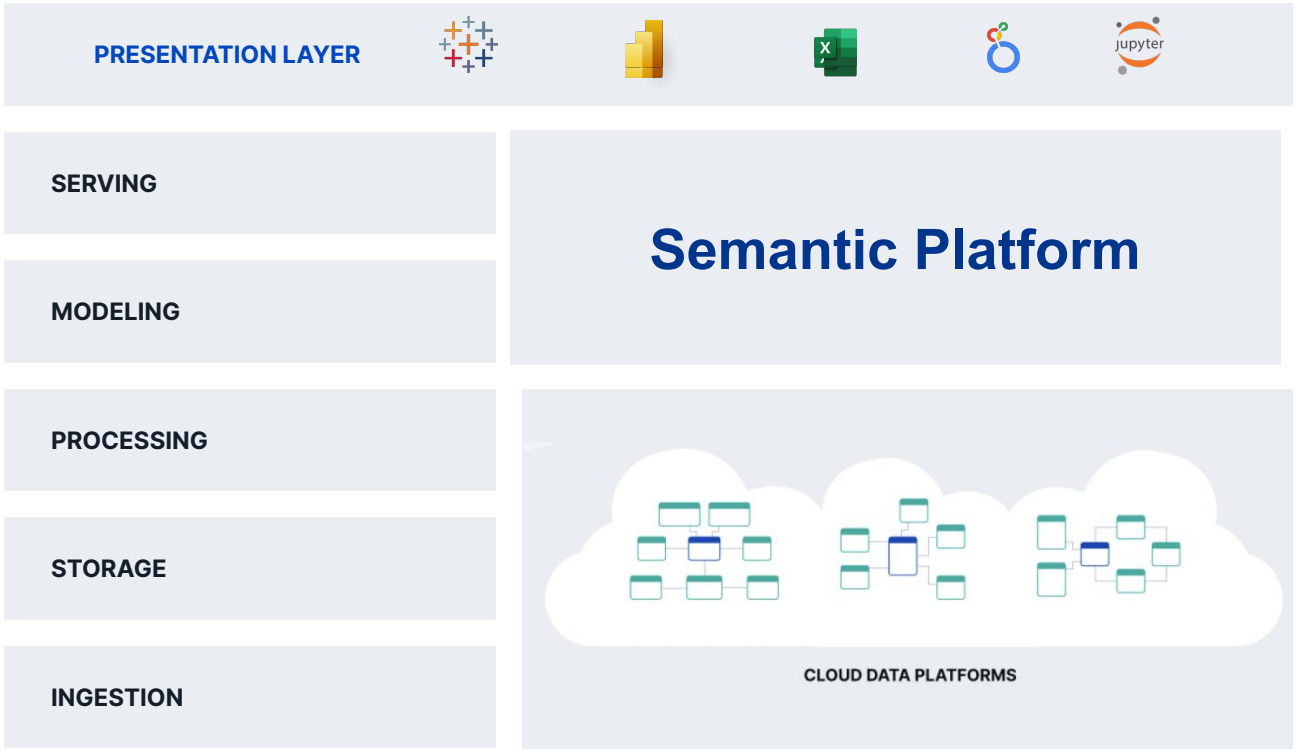


Semantic Layer Platform

Combining Passive and Active Metadata



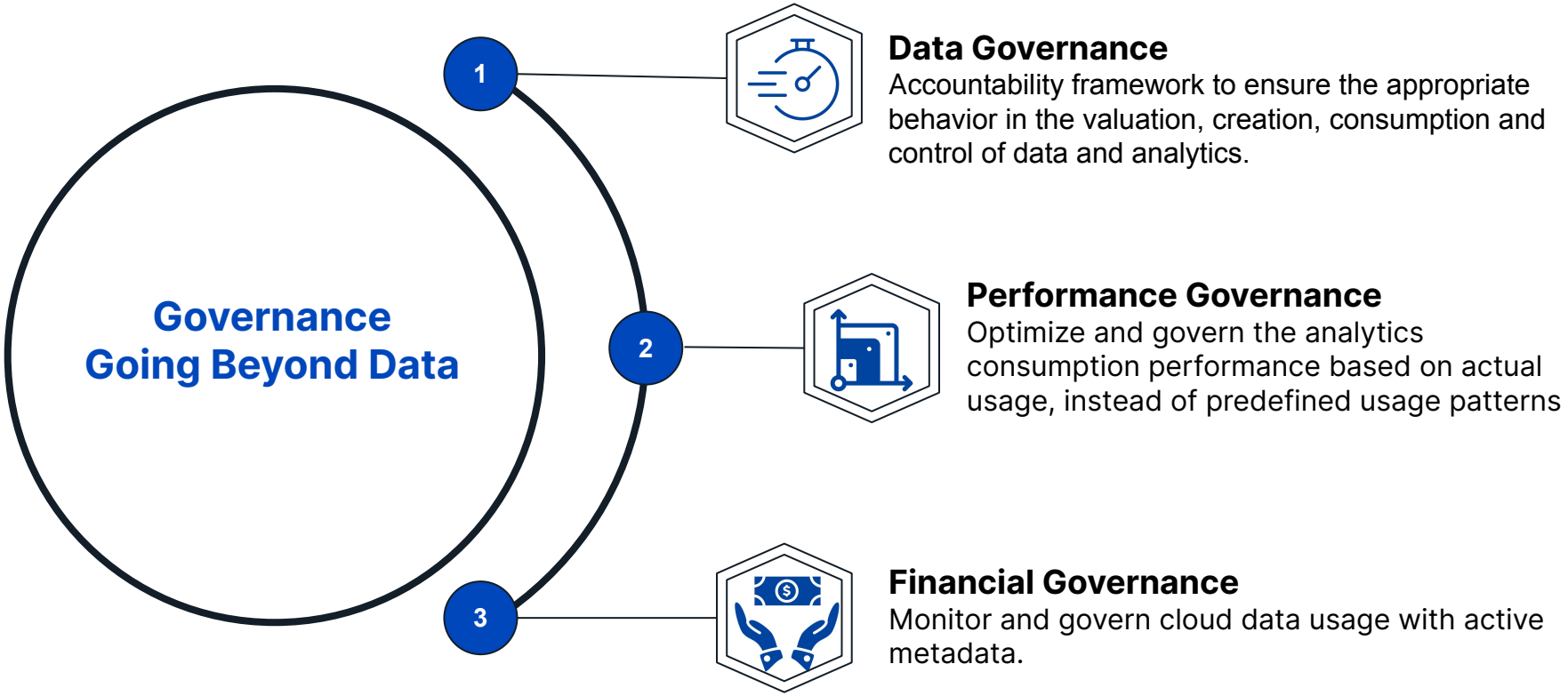
Modern Cloud Analytics Consumption



- ➔ Governed self service

  (Descriptive + Predictive)
- ➔ Semantic engine monitors all analytics queries and optimizes cost and performance
- ➔ Users get access to all their data, rather than running analytics on subsets of data.

Time to Rethink Governance in the Age of Cloud Analytics



Data Governance
Accountability framework to ensure the appropriate behavior in the valuation, creation, consumption and control of data and analytics.

Performance Governance
Optimize and govern the analytics consumption performance based on actual usage, instead of predefined usage patterns

Financial Governance
Monitor and govern cloud data usage with active metadata.

Path to achieving data mesh and key capabilities

- ❏ Define **data domains** and alignment with business domains
- ❏ Combine data domains with business context to create **data products**
- ❏ Register data products and made available for **re-use** based on business needs
- ❏ Create the **data mesh tissue** by connecting the data domains via **conform dimensions**
- ❏ **Central governance** with a **federated approach** given the responsibility to business domains

AtScale

Leading semantic layer platform for enterprise analytics delivering:

- **metrics layer** for publishing full spectrum of augmented analytics tied to live cloud data assets
- **analytics workload optimization** that enables tie to live cloud data (**no extracts, no caching**)
- **democratized and decentralized data product** innovation within a **composable analytics framework**
- **seamless integration** with leading analytics tools, data platforms, and data fabric solutions

Sampling of AtScale Customers

Actionable Insights for Everyone: An Overview of AtScale

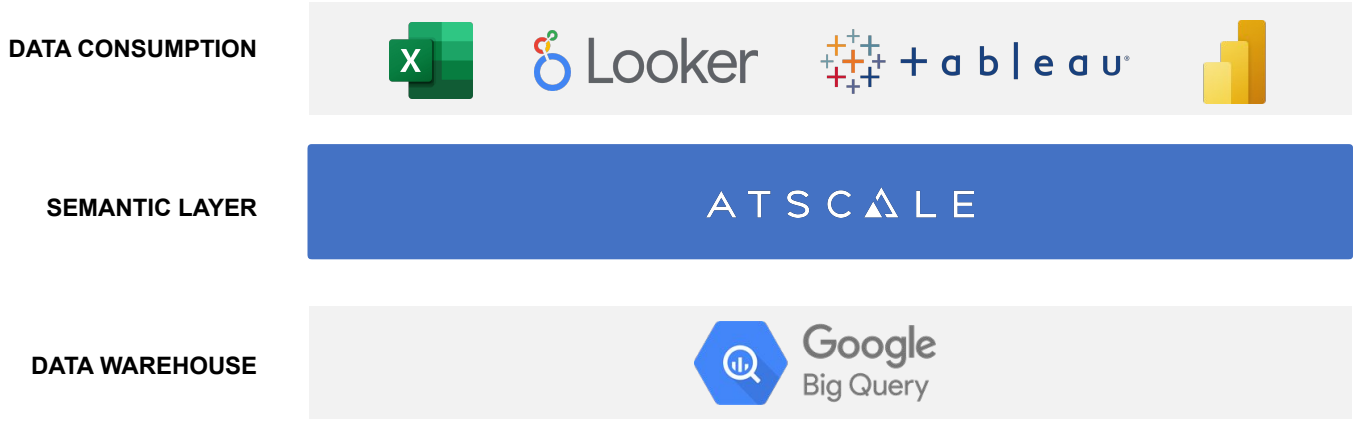
Affinity Federal Credit Union Use Case

Problem: AFCU realized they couldn't remain reliant on an outsourced analytics team and legacy analytics infrastructure tools like ModelMax or Dundas BI to unearth insights from their data.

Solution: With AtScale's semantic layer, AFCU was able to harness the power of dimensional modeling with AtScale, standardizing dimensions, hierarchies, and attributes to present a unified set of data regardless of the analytics toolset being used to access. By shielding users from the complexity of data wrangling and engineering, this organization has given their internal teams a leg up and made self-service BI a reality.

Key Benefits: Enable self-service BI, Create new data platform, Increase business agility

wayfair Use Case



Problem: Wayfair needed to drastically simplify their sprawling analytics infrastructure and had to maintain business continuity through their transition to the cloud necessitated operating a hybrid on-premises/cloud environment for a time.

Solution: With AtScale's semantic layer, they have been able to accelerate their time-to-insight with a live connection to their data at OLAP query speeds. Wayfair provides one unified & governed view of business data for their hundreds of data modelers and business analysts.

Key Benefits: Expedited insights, integrated toolset, lower cost, faster and more consistent analytics

See AtScale in Action

https://www.atscale.com/demo/

ATSCALE

AtScale enables smarter decision-making by accelerating the flow of data-driven insights. The company's semantic layer platform simplifies, accelerates, and extends business intelligence and data science capabilities for enterprise customers across all industries. With AtScale, customers are empowered to democratize data, implement self-service BI and build a more agile analytics infrastructure for better, more impactful decision making. For more information, please visit www.atscale.com and follow us on LinkedIn, Twitter or Facebook.