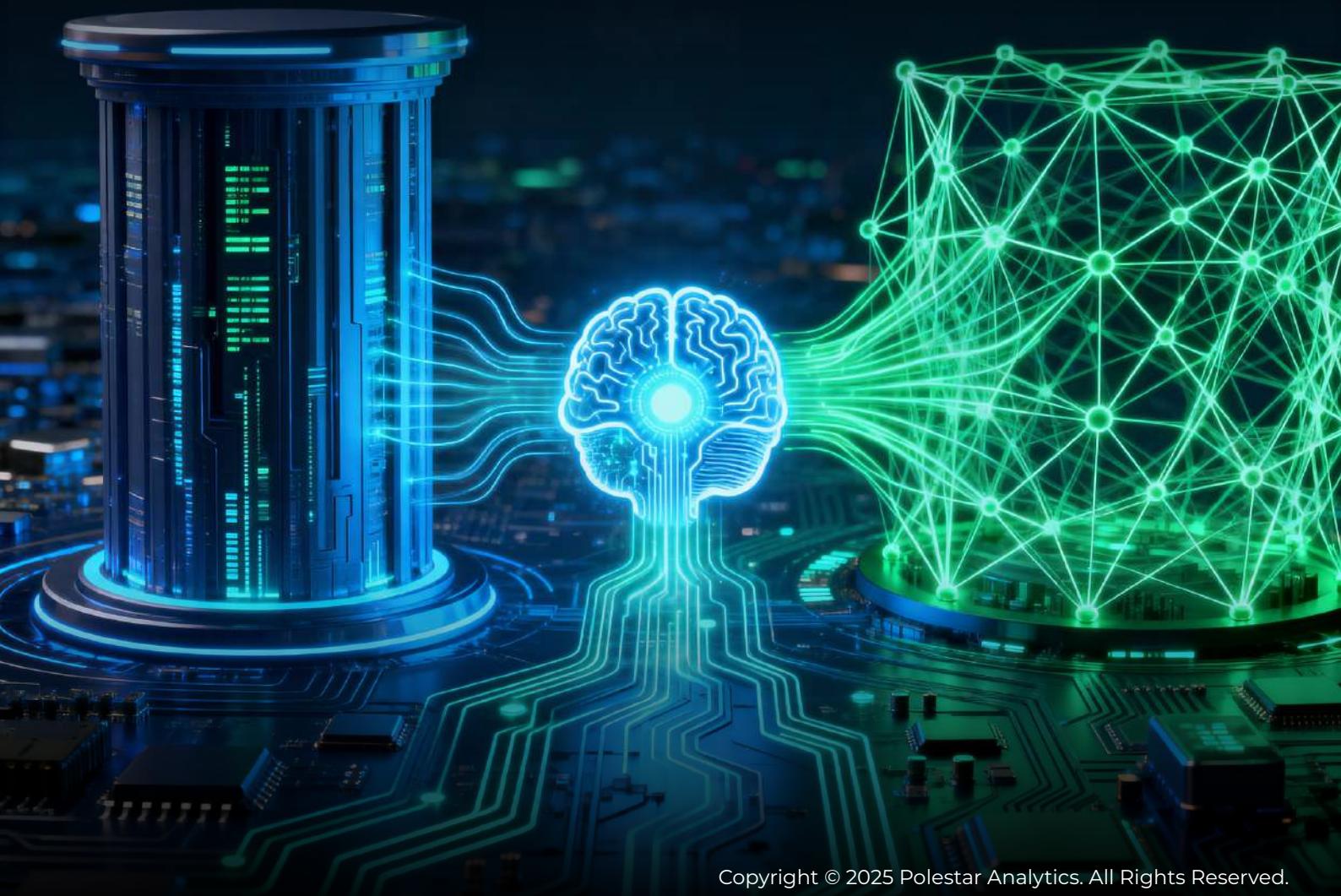


Case Study

Harmonizing Mesh

Data Warehouse & DDH

Implementation for an Alcobev leader



About our client

The client is a global leader in the alcoholic beverages industry with operations across major markets and a diverse portfolio of well-known brands. As data from over 150 systems across core business functions became increasingly fragmented, it began to limit cross-functional visibility and decision-making.

To address this, Polestar Analytics was engaged as part of a federated implementation team to architect and execute migration to a Databricks-based harmonized mesh data platform.



Technical & Organizational Challenges

The Data Architecture Challenge: Complexity and Fragmentation

The organization had critical challenges—technical, regulatory, and operational—that were constraining visibility, slowing AI adoption, and limiting the ability to leverage data as a strategic asset.



Fragmented Systems Impacts Decision-Making

150+ diverse systems create conflicting data, causing inconsistent insights, decision delays, and missed opportunities. Data mapping, master data management, siloed analytics, high costs, security risks, and maintenance overload worsen the problem.



Lack of Integration Increases Operational Risk

Legacy clouds and modern platforms operated without integration coherence, creating governance blind spots and escalating risks of data breaches and costly regulatory non-compliance.



Manual Processes Delay Business Response

Non-standardized data and manual report validation prolong audit cycles, and operational reporting—squeezing responsiveness and inflating IT overhead.



Trust Deficit Hampers Analytics Adoption

Inconsistent metrics and fragmented data limit self-service analytics, confining insights to central teams and undermining AI investments. Reporting delays erode confidence and slow adoption.



Unclear Data Ownership Slows Execution

With multiple touchpoints scattered across vendors and business units, lack of clear data ownership complicated issue resolution, increasing errors and masking compliance gaps.



Governance Gaps Heighten Compliance Risk

Navigating GDPR, alcohol regulations, and sensitive R&D/vendor data required fine-grained classification, selective encryption, and strict access controls to avoid costly regulatory penalties and reputational risk.

To address these constraints, the client partnered with Polestar Analytics to build a unified, compliant, and scalable data foundation — one that balanced engineering automation, governance rigor, and organizational enablement.

Technological transformation over years

Polestar Analytics' Harmonized Mesh Migration in their data warehouse journey

The organization had critical challenges—technical, regulatory, and operational—that were constraining visibility, slowing AI adoption, and limiting the ability to leverage data as a strategic asset.

Three-Phase Architecture Evolution

• Phase 1 (Pre-2021)

Monolithic Constraint

Single centralized Azure SQL Data Warehouse with complete IT dependency—all queries required engineering team intervention for resource allocation and optimization, zero self-service capability for business users, limited horizontal scalability for concurrent analytical workloads. Engineering bottleneck served as single point of failure for all BI operations.

→ Phase 2 (2021-2023)

Hub-and-Spoke Transition

Azure Synapse with value stream partitioning enabled functional independence but metadata heterogeneity prevented cross-stream joins—data duplication required for integrated analytics.

→ Phase 3 (2024- Present)

Harmonized Mesh Breakthrough

Polestar Analytics collaborated closely to drive execution across data standardization, governance automation, and delivery enablement within the harmonized mesh framework. Leveraging the **Databricks** Lakehouse and Unity Catalog's powerful features—such as a standardized metadata layer, federated ownership, cross-stream joinability, and LLM-based natural language query interface—we enabled business users to run queries independently while freeing engineers to focus on advanced ML deployments. Polestar Analytics' expertise amplified the platform's value by streamlining integrations, optimizing governance, and driving user adoption.

Technical execution

Building the Foundation for Standardization, Governance, and Organizational Change

Migrating 150+ systems required a three-pillar strategy — automation, compliance, and alignment across a multi-vendor ecosystem.

Here's what we did :



Engineering Standardization



Governance & Compliance



Organizational Enablement

Engineering Standardization

- Polestar Analytics helped design and implement a harmonized Databricks mesh with the client-owned Ingest IQ framework to automate ingestion, schema detection, and testing.
- Developed automated data quality checks and frameworks, cutting errors and streamlining onboarding of new sources.
- Implemented CI/CD pipelines via Azure DevOps for efficient code integration and deployment with real-time monitoring.
- Established scalable engineering standards across teams and vendors to ensure consistent, high-quality data integration.

Outcomes:

Significantly improved data quality and trust, accelerated source onboarding, and enabled scalable automation for consistent engineering excellence.

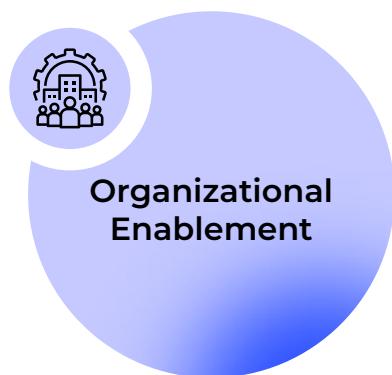
Governance & Compliance

- Established a jurisdiction-aware data governance model enforcing GDPR and regional alcohol laws.
- Introduced a unified metadata taxonomy and PII framework, plus applied data protection controls tailored to sensitive R&D and vendor datasets—ensuring secure and compliant yet accessible analytics.

Outcomes:

Accelerated governance adoption, streamlined onboarding, and faster, more efficient compliance across fragmented environments—significantly reducing risks related to regulatory violations, data breaches, and costly penalties due to non-compliance.

Technical execution



Organizational Enablement

- Enhanced existing machine learning initiatives by providing an ML-ready data layer supporting key use cases such as Lab-GPT and vendor anomaly detection, improving model accuracy through cleaner, better-quality data.
- Delivered via a hybrid TNM model, enabling natural language querying within Databricks for intuitive analytics access across the organization.
- Coordinated stakeholder groups and vendors through structured change management and introduced a semantic layer to democratize analytics, reduce IT dependency, and enable broader data accessibility.

Diagnose & Align (Done)	Strategize & Mobilize (Done)	Execute & Enable (Ongoing)	Sustain & Optimize (Ongoing)
Deep stakeholder impact analysis tailors engagement efforts	Targeted roadmaps blend organizational goals and technical readiness	Customized enablement delivered through role-specific training and immersive workshops	Continual feedback, leadership reinforcement, and agile adjustments drive adoption
Resistance vectors are identified and risks mitigated upfront	Executive sponsors engaged early to drive accountability and cultural change	Change champions embedded across teams amplify adoption and advocate for users	Adoption metrics are measured rigorously, victories celebrated to embed sustained behaviors

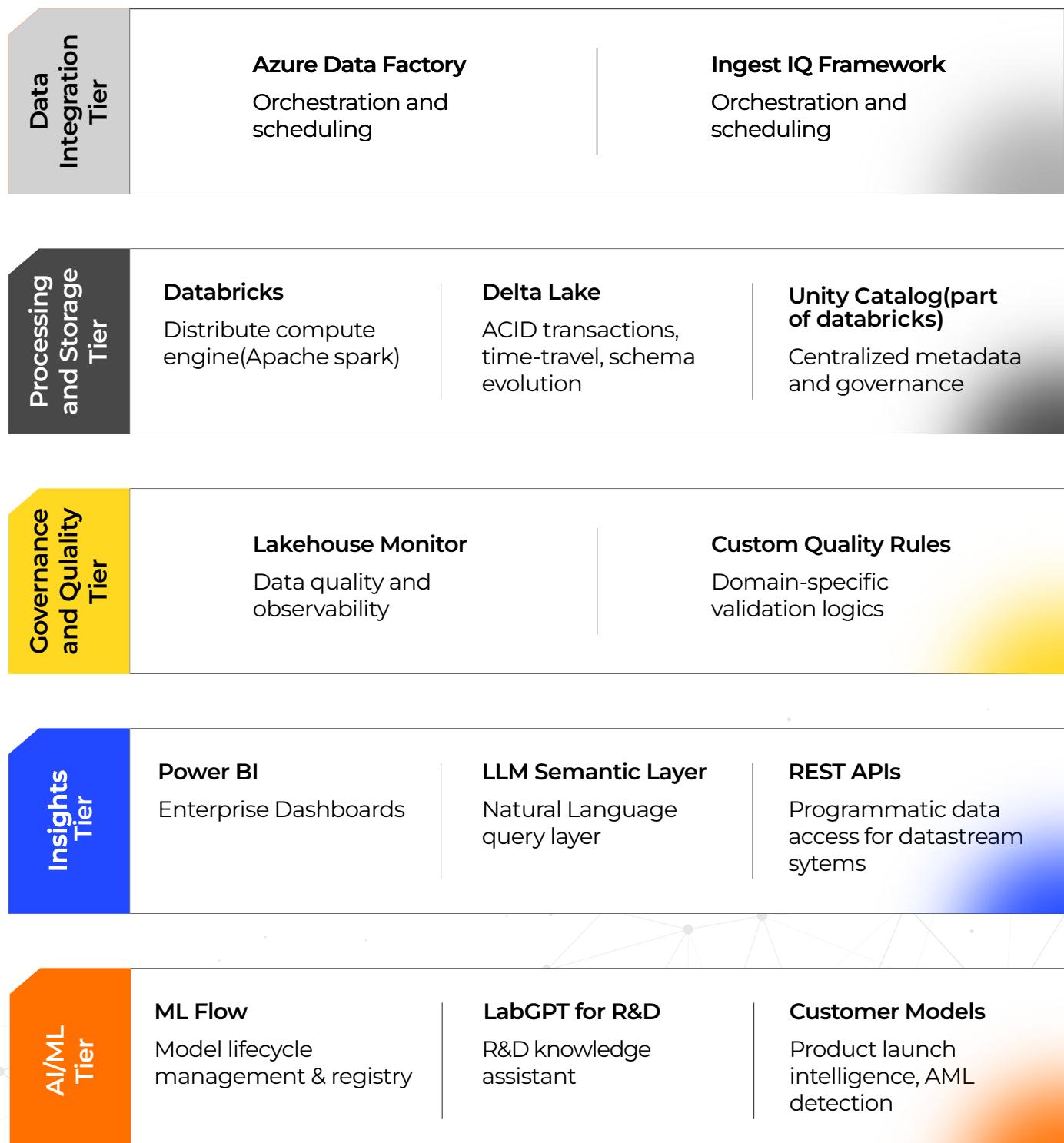
Outcomes:

Implemented 50+ change management programs with over 90% completion, driving measurable progress and efficient multi-vendor collaboration.

Technical execution

High-Level Logical Architecture: End-to-End Technical Stack

To operationalize the three-pillar strategy; The implementation leverages **cloud-native Azure** and Databricks capabilities to deliver a horizontally scalable, ML-ready lakehouse architecture with automated governance and real-time observability.



Overall Impact

Driving Scale, Compliance, and Measurable Business Impact

The modernized stack and three-pillar execution delivered measurable outcomes — accelerating data readiness, governance maturity, and business value realization.



99%

Reduction in number of updated per pipeline run



>90%

Improvement in query execution time



250+

Man hours saved through automation



25%

Reduction in ingestion effort and cost



150+

Source systems integrated across finance, marketing, HR, and supply chain



50k+

R&D documents processed by their custom built GPT for research insights.

About Polestar Analytics

We are a trusted partner in the Planning and AI space, providing valuable support to businesses looking to optimize their processes through data. By leveraging our expertise as an AI powerhouse, our team consisting of Data Scientists, Developers, ML Engineers, Big Data Engineers, Business Consultants, Quality Experts, Model Builders, etc. help organizations unlock the full potential of their data.

[Reach out to us today](#)