

An American consumer packaged goods company



Data-as-a-product for supply chain analytics reduces inventory costs by 15%



Business challenge

The client is a leading American food manufacturer of 65 brands available across supermarkets, food service centers and restaurants. Gaps in the distribution network were leading to stockouts and lost sales across retail outlets. Inventory management was significantly impacted by the lack of consistent, quality data and information transfer between multiple user systems. The data from disparate sources needed to be consolidated to deliver near real-time insights across a range of advanced analytics/ML use-cases.

The key areas which required Sigmoid's expertise were:

- Making data products available for cross-domain analytics application
- Developing data pipelines to automate the creation of on-demand reports for business services and IT teams to monitor prioritized KPIs
- Enhancing interoperability, reusability and consumability of data across domains

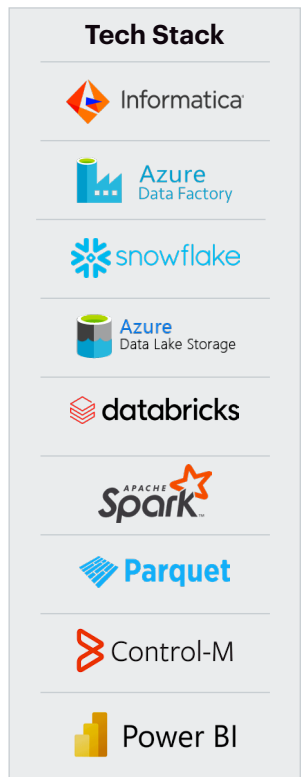
Overview

Sigmoid developed a data mesh architecture for modernizing enterprise data to enable next-gen analytics use cases that helped the client improve inventory and sales. The analytics team identified and forecasted unique events that could lead to supply chain disruptions. The insights were further applied for demand, supply and capacity optimization. The new architecture facilitated collaboration between business domains, thus enhancing overall process monitoring, and planning.

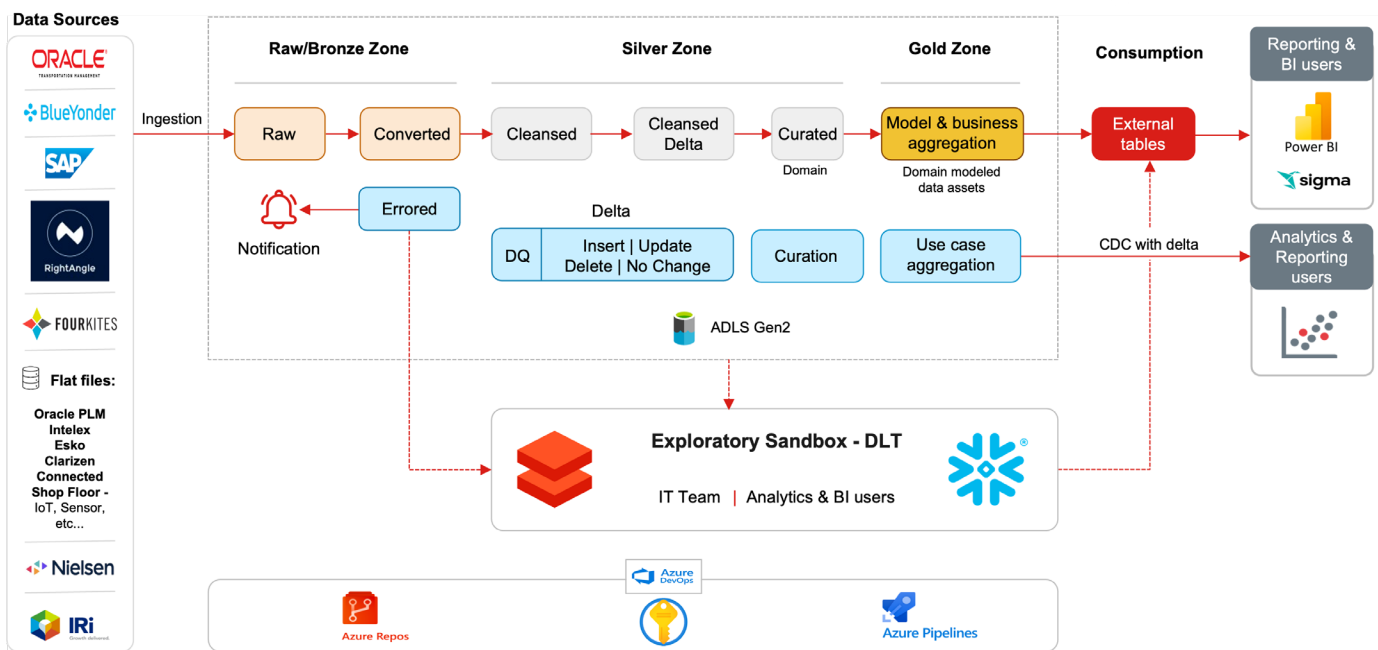
Sigmoid's solution

Sigmoid modernized the data architecture by enabling data-as-a-product for multiple business domains with greater ownership to the users. The decentralized architecture allowed interactions between multiple data hubs residing within Databricks, Spark, Snowflake etc. for cross-domain operability of data with 360-degree business view. The custom-built data connectors were developed using a Low-Code No-Code methodology to streamline the integration of multiple existing data sources with streaming data sources. Data from 30+ source systems such as SAP, Blue Yonder, RightAngle, Oracle Transportation Management, sensors, and IoT devices etc. flowed between different data zones through conversion, cleansing, curation and aggregation stages built across Snowflake and ADLS. Data from multiple Centers of Excellence (plan, procure, manufacture, deliver and sell) was centrally integrated for scalability and reusability.

All of the processed data was cataloged using business metadata to speed up the discovery. The consumption layer is complemented with a data mesh on top of Snowflake which enables the designing of various functional and enterprise-wide data products for multiple business users and use-cases. Within this layer, we programmed custom-built reports and dashboards to visualize user-specific insights and KPIs for granular visibility into each operation. The data mesh was driven by DataOps best practices to ensure scalable pipelines with code reusability, modularization, and maintenance in real-time. The machine learning models embedded in the intelligence layer helped derive prescriptive insights for various scenarios.



Architecture diagram



Business impact



Sigmoid's data mesh architecture enabled data products and facilitated domain-driven ownership. The business teams were quickly able to identify disruptions which might impact the supply chain operations. Better visibility and real-time access to actionable insights improved forecasting. The client could identify 3x new analytics use-cases to apply domain data which were previously limited. With this decentralized approach, the client was able to reduce their time-to-market.

About Sigmoid

Sigmoid combines data engineering and AI consulting to help enterprises gain a competitive advantage through effective data-driven decision-making. Our innovative and case-specific solutions for data management have helped multiple clients leverage data mesh for business analytics including supply chain. Let us empower your organization to enhance operational efficiency with the use of data engineering, domain-driven data architectures, and advanced analytics.

Visit www.sigmoid.com to know more.

Let's Get Started!

Reach out to us at marketing@sigmoid.com to deploy advanced analytics and data management solutions to enhance business and supply planning.