

SUCCESS STORY



INSIGHTFUL DEMAND FORECASTING IN SUPPLY CHAIN ECOSYSTEM

ABOUT CLIENT

The client operates an extensive supply chain network of consumer goods globally. Provides a Vendor Platform connecting 10,000 suppliers as partners, ensuring the best fit for any project in any capacity.

BUSINESS

Data and Analytics

DOMAIN

Supply Chain & Logistics

TECHNOLOGIES



KEY HIGHLIGHTS

- Implemented a 4th generation data solution leveraging Databricks as a unified data platform for terabyte scale processing.
- Nearly 80% improvement in system efficiency and data retrieval time lag owing to the Data Model enhancements.
- Developed intuitive dashboards & seamless UX for business users with customized content based on User Roles.

PROJECT OVERVIEW

With an extensive global supply chain network, the client leveraged its depth of experience, market knowledge, and technology to help retail brands adapt to changing consumer and manufacturing trends.

BUSINESS CHALLENGES

- It was challenging to conduct data migration for terabyte scale data while maintaining ZERO down time for 24/7 systems with constant incoming requests. Without a thoughtful planning for the migration, the client's systems could be at risk or suffer from unexpected outages.
- The client had heterogenous source systems from which data had to be aggregated and visualized for building independent dashboards for each source.
- Data redundancy was present across various sources which had to be handled to reduce the processing time.
- A company may have run weekly or monthly aggregate forecasts with limited data sets in the past but competing in the era of e-commerce where consumers can easily switch stores requires that companies to have the ability to predict demand for a SKU at a day and store level. This is when the need of a Lakehouse emerged to integrate all the entities and attributes to a single data granularity.

SOLUTIONS

After a detailed study and assessment of the existing systems & related applications, Indium implemented Centralized data ingestion and storage for reporting and analytics platform.

Given below are key highlights of the solution delivered.

- A new architecture involving multiple indices which encompasses the product attributes in 4 indices. Due to the classification of the product attributes, page refreshing could be carried out

daily.

- Developed integrated platform for enterprise level data analytics platform with data from multiple source systems.
- Data Masking: As per Supply Chain data compliance all the PII data (Personal Identifiable Information) has been Masked. Created all the necessary policies to apply on PII Data in Snowflake to adhere to the Compliance.
- Elasticsearch Development: Migrated the data to Elastic workloads from PostgreSQL. Transferred most of widgets from Postgres to Elasticsearch, by scraping the data attributes. Leveraged Elasticsearch for efficient data search and retrieval. Due to this, the client was able to experience faster time to insights. For instance, this change improved the search latency by 85%.
- JSP Development - Dashboarding based on User roles: Based on the title of the staff and role in the organization, the Content and UI is dynamically changed. A unique and customized approach was undertaken. The result was that, 90% faster page synchronization owing to improved architectural design.
- Standardization Cost sheet: Standardization and Techpack was done manually, so Indium team has automated the whole process to run without any intervention.
- Developed a serverless, schema-less data mesh as a single source of truth from all the heterogenous source systems
- Implemented a decentralized data ownership model which delegates datasets ownership from central to the domains
- TEP Trend Engine Platform: Migrated all the Transformation DBT Code to Redshift Compatible.

- **Material Standardization:** Earlier, extraction of content from customer websites was producing errors. Now, we have done a uniform standardization, grouped / categorized the similar ones.
- Streamlined the process by minimizing the load time and built a single version of MDM.
- Execution of backend APIs in a Docker to enable DevOps based deployment (CI/CD playbooks)

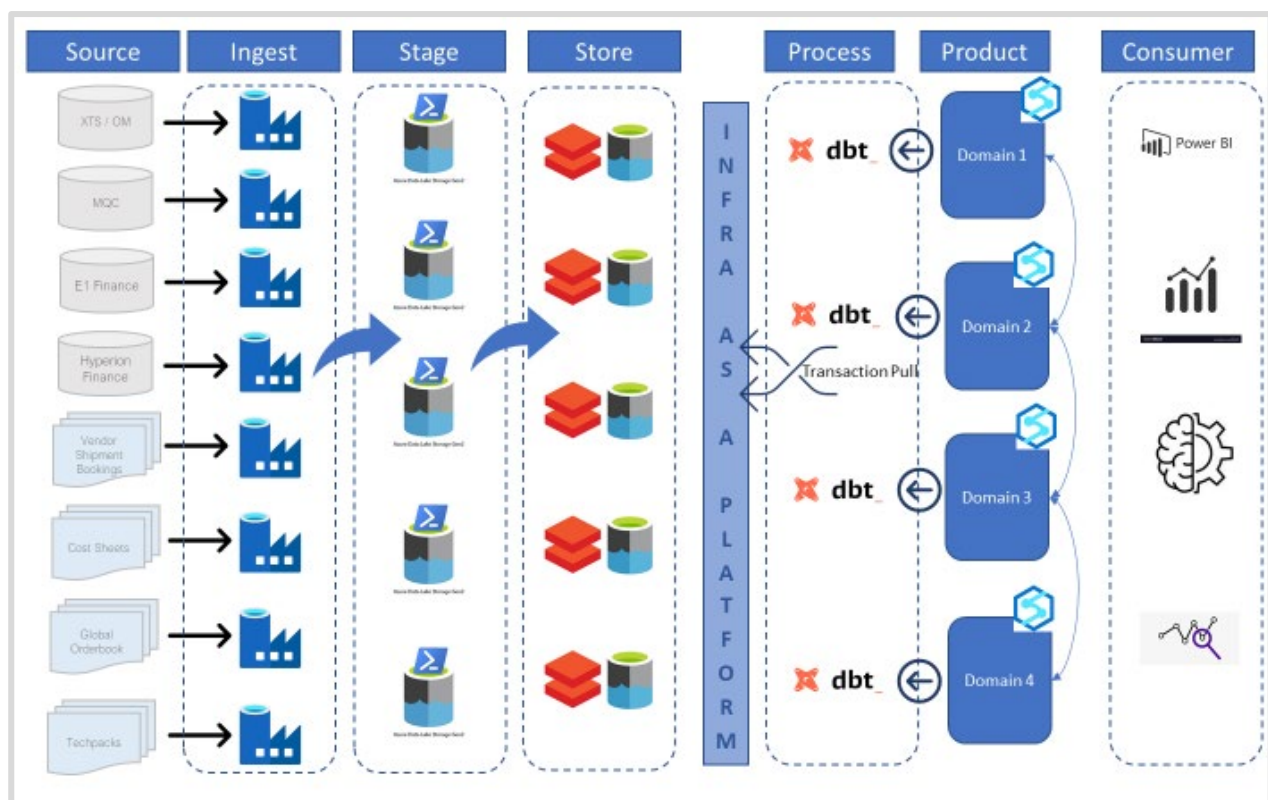
BUSINESS IMPACT

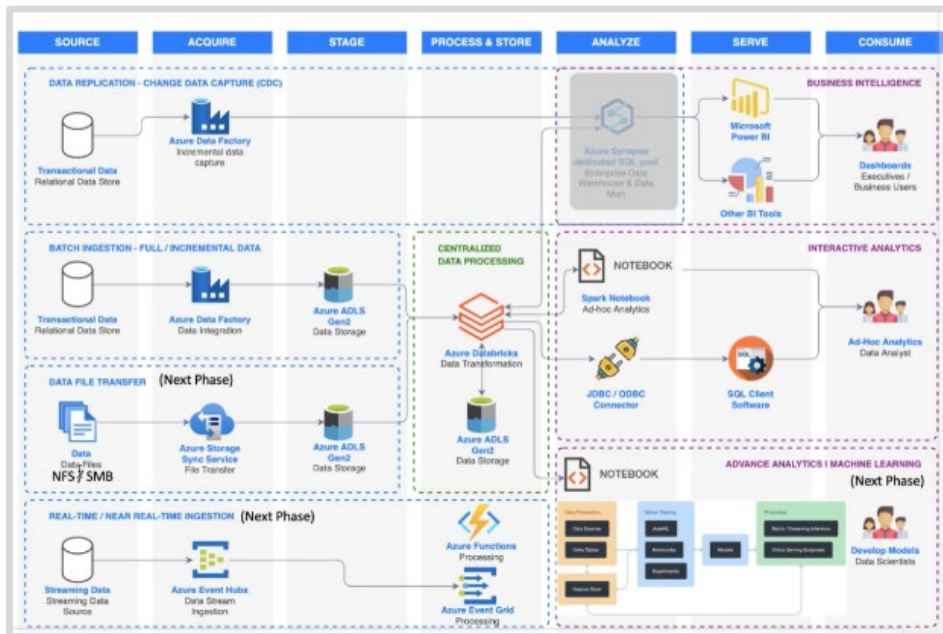
- 25% Cost Reduction for end-to-end managed data delivery and reporting services. The Overall TCO was reduced by 10 - 12%. Earlier business departments / units had a lot of issues with mapping of the data with reports.
- 30% Decrease of Load Time: The job status

changed from sequential to parallel by which load time is reduced.

- 15% Less Process Time: Distributed processing was moved to SPARK platform. It directly helped in reducing of processing time.
- 100% test coverage for data migration and incremental data validations.
- Helped in identifying data ambiguities and quality issues at early stages.
- Data Silos have been corrected now to build a Robust single dimensional model.
- Individual data domains achieved through decentralized dataset ownership is responsible for their own security

TECHNOLOGY ARCHITECTURE:





ABOUT INDIUM

Indium is a Digital Engineering Services leader and Full Spectrum Integrator that helps customers embrace and navigate the Cloud-native world with Certainty. With deep expertise across Applications, Data & Analytics, AI, DevOps, Security and Digital Assurance we "Make technology work" and accelerate business value, while adding scale and velocity to customer's digital journey on AWS.



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