Tiger Analytics

Tiger Analytics enabled a major US life insurance company to greatly improve data provisioning with unified data and analytics

Tiger Analytics designed and developed a platform to support multiple Analytics and Machine Learning use cases. The solution ensured that a centralized ecosystem could host all the required data types while meeting key Analytics and Reporting demands. It ensured improved and trusted data provisioning for application systems and business users without congestion.

The Background

Our client is a Fortune 500 Life Insurance company that empowers millions of individuals and families to manage their financial needs with a wide range of policies. As they used multiple enterprise data warehouses with selective integration, they were looking to build a reliable Data and Analytics (D&A) platform that would serve as the Information Mart. They wanted it to host structured, semi-structured, and unstructured data while supporting various Analytics and Reporting needs. It would help the client achieve more scalability and overcome performance issues in existing ETL jobs and reporting queries.

Key Challenges

\ **Data integration issues:** Data silos existed across multiple EDWs with only selective integration.

\ **Performance bottlenecks:** Scalability limitations created performance issues with existing ETL jobs and reporting queries.

\ **Untapped data potential:** The architecture did not support loading and analyzing data, leaving a tremendous amount of untapped intelligence.

Our Solution

The team created key components such as the EOM (End-of-Month) Layer by preparing a common layer to serve the data at a given snapshot, the BDV (Business Data Vault) Layer by creating a validation layer with all the business calculations and making the data available for usage at the subject and snapshot level.

Next, the team built a dimensional data model for deploying the Insights Data Mart, with a Query Master Table to hold Snowflake SQL scripts and load the BDV/Data Mart.

An Environmental Setting File was created to store specific run-time configurations like passwords, parameter values, etc., without hardcoding. Then, the team developed a Python+Ninja framework to orchestrate the entire data load and ELT pipelines, further leveraging it for parallel execution of Snowflake queries.

Some of the key solution features included:
- Data Vault architecture for agile data modeling - reducing implementation cycles
- Metadata-driven ingestion framework
- Great Expectations-based Data Quality framework
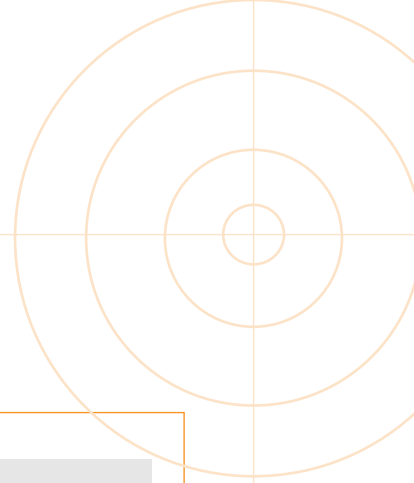- Information Marts as Asset Stores for each period/asset

Tech Stack

/ AWS

/ ELT (Python+Ninja framework)

/ Snowflake

/ Ctrl M for Orchestration

/ Great Expectations

/ Azure DevOps for CI/CD

Solution Architecture

Applications

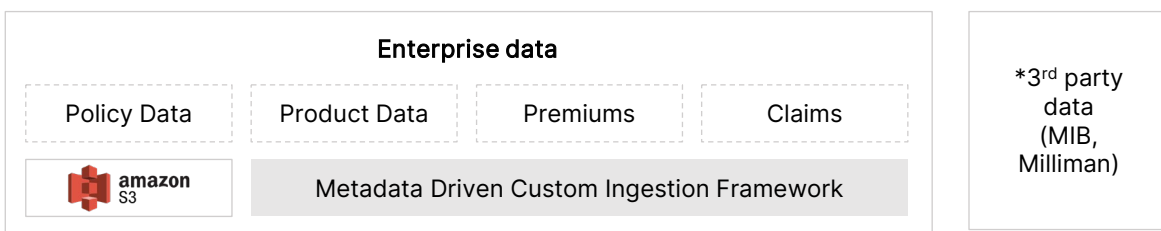| LOB Apps	Reporting	Mortality Study	ML Models	*AUW Models

SNOWFLAKE PLATFORM

Snowflake VWs

Data Vault

- Business vault
- Metrics vault

→ Storage →

Information Mart

- Metrics Mart
- Error Mart
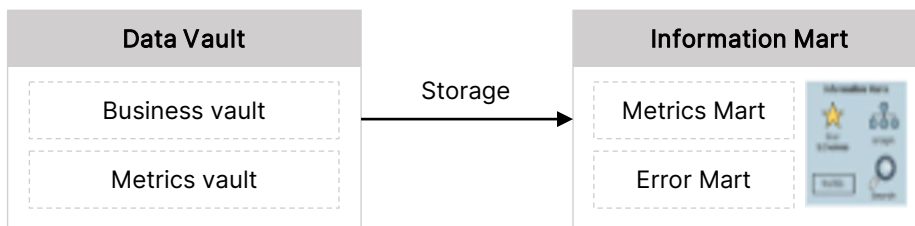
Data Engineering, Orchestration

ELT using Ninja build 🐍 python™

↑

Staging Layer

Data Quality & Monitoring Framework

Cloud Object Storage

Enterprise data

Policy Data	Product Data	Premiums	Claims

amazon S3 | Metadata Driven Custom Ingestion Framework

*3rd party data (MIB, Milliman)
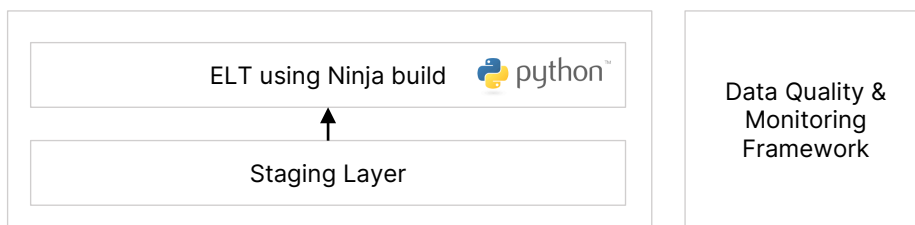
🗄 SQL   Microsoft SQL Server   📁 Historical data   JSON XLS CSV

Value Delivered

Query performance became faster, enabling agility in business insights.

Multiple data science and BI use cases were easily enabled.

Data provisioning for business users has significantly improved.

There was no ETL congestion while enabling data provisioning to application systems, reducing the load on transactional systems.

Data centralization ensured **trusted data access.**

About Us

Tiger Analytics is a global leader in AI and analytics, helping Fortune 1000 companies solve their toughest challenges. We offer full-stack AI and analytics services & solutions to help businesses achieve real outcomes and value at scale. We are on a mission to push the boundaries of what AI and analytics can do to help enterprises navigate uncertainty and move forward decisively. Our purpose is to *provide certainty to shape a better tomorrow.*

Being a recipient of multiple industry awards and recognitions, we have 4000+ technologists and consultants, working from multiple cities in 5 continents.
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