

Case Study

Modernized BI and Delivered Data Intelligence with AWS & Snowflake



COMPANY

One of the largest independent distributors of heavy-duty truck & trailer parts. They have over 65 years of industry experience and operate in approximately 145 locations across the US and Canada. Partnering with 200 major manufacturers and an extensive inventory of 300,000 brand-new products, the client is recognized as a reliable full-service provider for heavy-duty truck overhaul and maintenance services nationwide.

CHALLENGES

As part of their data warehousing and executive reporting initiative using MSBI-SQL Server 2008, the client faced several performance and operational roadblocks along with BI architectural flaws and system bottlenecks, including:

- The client's legacy configuration struggled with increasing volumes of data, which resulted in performance and scalability issues.
- The lack of an event-driven handshake facility between different layers of data refresh caused data inconsistency.
- Regular, critical SLAs were missed, and reports failed to reach executive stakeholders within the required times.
- With insufficient throughput to accommodate concurrent workloads, the client experienced delays in data pipelines and system bottlenecks.
- Troubleshooting became difficult due to the lack of error-handling and alerting facilities.
- There was a lack of high-level security for sensitive data.



SOLUTION

V-Soft's data engineering experts transformed legacy BI into a scalable, automated data platform using AWS & Snowflake to accelerate modern data management and address performance issues faster. The solution offers:

Automated Data Ingestion through Snowpipe

We leveraged a Snowpipe-driven auto-ingestion setup to load structured data from AWS S3 to Snowflake Tables and Views continuously and effectively. This resulted in efficient Tableau and BI reporting, facilitating quick data analysis and data-driven decision-making.

Data Quality Assurance

To maintain data integrity, we integrated sophisticated Snowflake mechanisms for de-duplication, data validation, and effective filtering, ensuring that only clean, trusted data entered the analytics environment.

Smart Monitoring & Notifications

We built in a smart auditing system that automatically sends email notifications to the right teams whenever issues occur during data loading, extraction, or transformation. This approach improved visibility across operations and helped ensure greater accountability.

Enterprise-Grade Data Security

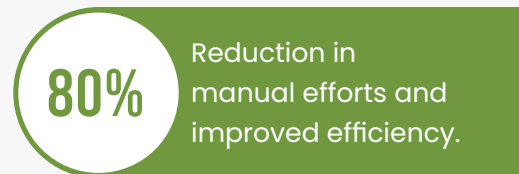
To ensure the security of data privacy, we configured Server-Side Encryption (SSE) with AWS KMS master keys, so that all data at rest in S3 was encrypted securely per enterprise security standards.



RESULTS

The client is now experiencing a significant impact from our unified, data-driven platform that brings together key performance insights across the organization. Key outcomes include:

- **Seamless Automation**
ETL processes are now scheduled to run automatically, significantly reducing the need for manual involvement.
- **Improved Alignment**
Better integration between BI tools and the data platform results in easier workflows and more aligned operations.
- **Increased Data Integrity**
Advanced data validation processes have significantly enhanced the accuracy and quality of data reports.
- **Faster Reporting**
Reporting cycles are reduced and optimized with greater agility to support evolving business requirements.



Technologies Used

- Amazon S3
- Snowflake
- Tableau