CASE STUDY

REBUILDING THE COMMERCIAL DATA ENVIRONMENT TO ENHANCE BUSINESS PROCESSES, REDUCE TIME TO MARKET, AND IMPROVE FIELD USER EXPERIENCE.

INTRODUCTION

Many life sciences organizations have siloed applications, systems, and data. Departments or business functions can quickly become fragmented and even duplicated from these silos. When this occurs, answering even the most basic but critical questions about performance metrics or key performance indicators (KPIs) for a business becomes challenging. With the growing volume of data, organizations need to migrate their data warehouse applications from on-premise to the cloud (or even on-premise cloud) to optimize costs and performance.

Redesigning the commercial data environment (CDE) provides a standardized data model for ad hoc or routine analysis and self-service business intelligence without impacting existing downstream systems or reports.

BUSINESS SCENARIO

A leading life sciences company wanted to migrate their existing CDE from SQL server (on-premise) to Snowflake® (on the cloud). Their current business processes around integrating the data sources were not metadata-driven, which increased the time to market for new data sources. The data quality was compromised because adding new data quality (DQ) checks throughout the data transfer lifecycle was challenging. The end user experience for the business users was also compromised. There was no layer in the current environment to provide a single-source-of-truth for all the commercial datasets integrated with the master data management (MDM) and sales operations systems.

The company wanted to transform its business processes around customers by introducing a new and effective CDE solution to help the business perform faster ad hoc analysis on the overall commercial data integrated in one place. It would provide a scalable framework for faster data source onboarding, thereby reducing the time to market and improving the field user experience.

CHALLENGES

The existing system presented many challenges, which led the client to redesign and migrate the current CDE from on-premise (CDE 2.0) to a cloud platform (CDE 3.0).

Onboarding and integration of new data sources

- Lack of a flexible data onboarding framework to ensure smooth onboarding of datasets across brands
- No streamlined process or data model to onboard new sources

AXTRIA
INGENIOUS INSIGHTS

Data quality

- Lack of adequate DQ checks in the CDE system
- No dashboard to monitor DQ failures

Data processing

- Longer data processing time across different layers of the CDE 2.0 system
- No audit and orchestration framework to track the execution dependencies for the daily data loads

End-user experience

- Lack of data standardization, resulting in the absence of a single-source-of-truth for the business users
- Very difficult for business users to perform ad hoc data analysis

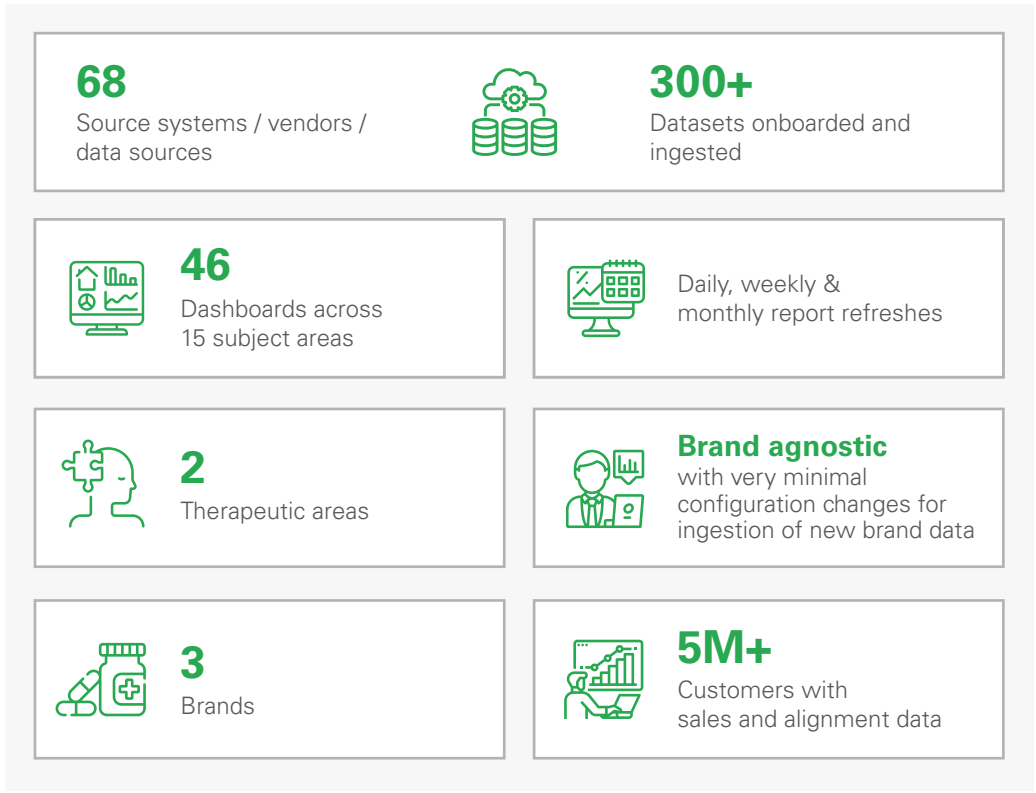
AXTRIA'S APPROACH TO THE SOLUTION

Axtria's CDE team:

	Assessed the existing CDE system (CDE 2.0) and redesigned it according to industry standards and best practices to overcome the customer's challenges
	Performed a deep-dive analysis of 300+ datasets and created a metadata-driven design approach to onboard the datasets across the layers of the CDE system
	Enabled a business-friendly semantic layer where business users could perform ad hoc analysis and self-service analytics to provide a unified user experience
	Ensured a future-ready, scalable system by using end-to-end integration with multiple source systems and applications like Veeva CRM, Javelin, Marketo, etc.
	Performed a scalable audit and orchestration process to manage the execution dependencies
	Assumed ownership of detailed reconciliation of the existing system (CDE 2.0) and change management process with downstream applications

KEY HIGHLIGHTS OF THE SOLUTION

1. ***Raw Layer***
   Replica of raw data files from various data vendors in the form of Snowflake tables via the data ingestion engine
2. ***Cleanse Layer***
   Standardized, harmonized, and cleansed raw data
3. ***Exchange Layer***
   Data exchange layer for cloud-based platforms like Veeva CRM/Patient Services and internal databases
4. ***Data Warehouse Layer***
   Enabled self-service business intelligence (BI) to be performed on dimensional models
5. ***Semantic/Extract Layer***
   Enabled easy-to-use subject area-driven data objects to ensure faster self-service BI
6. ***Python-Based Engines***
   The data ingestion engine, extract engine, and DQ engine were built on top of the overall solution using a metadata-driven approach
7. ***Snowflake-Based Engines***
   Reporting engine, clone engine, business rule engine, and archival engine were built in Snowflake to facilitate the requirements for automation of reporting refresh, auto cloning of schemas, and auto archival of tables



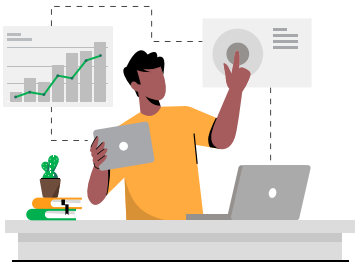


Figure 1 – ***Solution Highlights***

BENEFITS

Category	Product Agnostic and Integrated	Flexible and Efficient	End User Experience
Benefits Delivered	• Product agnostic data structures and processes • Fully integrated with CRM, Patient Service Hub, MDM, and all downstream sales planning processes by utilizing delta, re-statement, and customer merge processing wherever possible • Synchronized data models to align customer, product, market, and team definitions • Easy to manage tables for customer, sales, and alignment data	• Metadata-driven data ingestion, cleansing, and data quality checks enable efficient source onboarding and ongoing data processing • Metadata-driven extracts, reporting, and archival engines • Audit batch process to manage execution dependencies • DQ rules applied throughout the data transfer lifecycle • Faster time to market with easy change management and data loads	• The semantic layer enables users to: – Access a single version of pre-processed functional data (single source of truth) – Easily use the business data layer • Organized, standardized, and normalized table design for easier and faster ad hoc analysis and self-service BI

CONCLUSION

With Axtria's implementation of CDE 3.0, the client realized the benefits of using a cloud-based data warehousing platform with a business-friendly semantic layer to perform easy ad hoc analysis. With these benefits, the client could migrate the current system from on-premise to a cloud-based platform, resulting in an effective go-to-market strategy. The business teams made faster and better decisions resulting in potential top-line growth and cost savings.

Founded in 2010, Axtria is a global provider of cloud software and data analytics to the life sciences industry. We help life sciences companies transform the product commercialization journey to drive sales growth and improve healthcare outcomes for patients. We continue to leapfrog competition with platforms that deploy artificial intelligence and machine learning. Our cloud-based platforms - Axtria DataMAx™, Axtria SalesIQ™, Axtria InsightsMAx™ and Axtria CustomerIQ™ - enable customers to efficiently manage data, leverage data science to deliver insights for sales and marketing planning, and manage end-to-end commercial operations. We help customers in the complete journey from data to insights to operations.

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