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South African Retail Giant Optimizes Inventory, Costs, and Sales Leveraging Its Own Data

Case Study

Overview
Driving more value from data

An ethically and socially conscious South African retail chain, with 400+ stores and an annual revenue of $4.3 billion, faced challenges in sales and decision-making due to unreliable/late sales forecasts; changing consumer behavior, partly caused by the pandemic; and chaotic data systems that impact data and inventory management.

Zensar's brief:
With the goal of improving forecast accuracy, cost savings, and stock optimization,

- create a demand data pipeline,
- build an MDM solution, and
- enable markdown optimization with MLOps.

Beyond the brief:
We enabled the data analytics, integrity, completeness, and accuracy needed for optimal promotions and markdown pricing.

Challenges
Inefficient data management systems

The client's IT department was under pressure to address siloed data in the existing system, causing delays in sales forecasts; scalability and processing limitations in existing tools, impacting performance; and manual efforts used to create and run data pipelines, causing inefficiencies.

Solution
Enabling better business decisions and resource optimization

Phase 1: Creating a demand data pipeline
- Launched new day analytics engine (NDAE) to get customer data into the cloud.
- Assimilated data into Amazon Simple Storage Service (S3)-based data lake by creating data pipelines from inventory data, Oracle Informix, sales data, and omnichannel data.

Phase 2: Building an MDM solution
- Engaged with the client by deploying agile squads comprising data and solution architects, data engineers, Quicksight developers, and DevOps engineers.
- Presented a future-state MDM system and addressed high-priority performance, scalability, and security issues.
- Laid the foundation for MLOps.
- Leveraged data-as-a-service (DaaS) to elevate end-user experiences and power data-driven decisions.
- Created a single view of truth to support data-driven decision-making.

Phase 3: Enabling markdown optimization

- Used MLOps to reduce data collection and data preparation time.
- Automated model building for markdown forecasting.
- Monitored and experimented with real-time data to train and retrain the model for optimal forecasting.
- Integrated AWS cloud with on-premises data to ensure data flow from the source system for data ingestion and forecasting.

Impact
Optimization of data, inventory, and costs

- 20 percent improvement in forecast accuracy
- 60 percent cost savings
- 10 percent greater stock optimization
- 99 percent of the streaming data used for forecasting

Business outcomes:

The solution enabled timely and accurate sales predictions, increase in sales due to optimal data-driven decision-making and inventory management, and greater agility due to lower overheads.

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