One of the world’s largest retailers: Leveraging machine learning and analytics to improve data quality

Global leader in retail increases proficiency of data analysis to achieve high efficiencies and cost savings.

While data quality maintenance is a top priority for any business, it is more so for retailers. Effective tracking of operational data and transactions, accurate maintenance of customers’ purchase histories and interactions are critical factors for operational efficiency and cost savings. While technology makes it easy to gather and store data, ensuring its quality and reliability is a challenge.

UST Global enabled one of the world’s largest retailers with global store and supply chain operations to achieve greater efficiency and cost savings by improving the accuracy of their inventory and product data.

We developed machine learning and analytics-based solutions to improve the client’s data quality and establish new data quality rules to sharpen data error detection and correction. The accuracy of data and the speed at which this is achieved has a strong positive business impact for the client.
Opportunity: Leveraging the power of machine learning and global partner framework to customize an integrated solution

The client, a global leader in retail, with store and supply chain operations across the world, was expending enormous manual effort to address operational data quality. Their massive scale of operations, driven by their global network of stores and a vast range of products, resulted in huge volumes of data. Maintaining accuracy of this data was critical to the success of the business. Errors due to manual operations resulted in significant losses, misplaced inventory and duplication of effort, besides negatively impacting customer service and revenue.

The need was to identify new:
- Machine learning and analytics based solutions
- Data quality rules that would increase data error detection and correction

This would result in accurate inventory and product data, leading to greater efficiency and cost savings.

The client chose to partner with UST Global based on our retail domain expertise and deep knowledge of their core needs and business processes.

Action: An integrated solution of error detection, correction and prevention

We engaged a member of our partner ecosystem, a technology vendor. We deployed their unique and powerful statistical, multi-modeling, self-learning engine to identify data errors with high probability and accuracy. We leveraged this capability to repair and recommend corrections for data errors.

It became apparent that a tool-only approach would not suffice as a complete and manageable solution. We therefore created a tailored application and process with this unique engine as the central component.

Our insightful understanding of our client’s core needs helped us develop an innovative solution that went beyond just creating intelligent data rules. We also set up an automated error detection and correction process.

Impact: Flexible and faster test environment provisioning for service delivery excellence

Speed and data accuracy have been the biggest advantages. This has had a significantly positive impact on operational efficiencies and cost savings. Our client now enjoys the following benefits:

- **High scalability** – The cloud-based solution fulfills the increasing demands of the client’s business.
- **Efficient detection and correction of errors** - The system has identified and corrected errors in 30% of the records in test runs, and filled in missing data in 5% of the records.
- **Significant enhancement of data quality** - The ability of the system to detect and correct errors has led to enhanced data quality.