

Overcoming Data Migration Testing Challenges with Precise & Effective Quality Assurance

ORGANIZATION

Our client is a leader in enterprise management software for the convenience retail and petroleum wholesale markets. The company has over three decades of experience and provides software solutions for the CPG, logistics, QSR, retail, single-site owners, and wholesale markets. AI technologies help customers gain an edge over the competition and improve margins.

They also have a rewards program that connects many brands with millions of consumers. This helps the consumers earn cents-per-gallon rewards for most purchases and expenditures. These rewards programs fit the needs of many retail brands from different industries.

CHALLENGE

Our client had a well-equipped application that provides insights into the various rewards programs and customer information. The application also generated reports based on multiple parameters. The data was stored in the Oracle database. The client wanted to migrate to the cloud (Amazon Redshift) without changing the intuitive data visualizations of real-time and historical data. One of the main challenges was a tremendous amount of interdependent data that had to be migrated. Other specific challenges included:

- Ensuring the correctness of data that was migrated from Oracle to Redshift DB.
- Ensuring that the new data flowed seamlessly from different systems to Redshift DB.
- Minor enhancements to the reports/rewards calculation needed to be accommodated along with the migration. The migrated data and the new data flowing in must be used for the rewards calculation. The client's important goal of this implementation was to increase the performance and securely save the customer's data.
- It was a short-term project centered around BI/DW sunset. The QA Team had no functional knowledge, yet there was still a need to know certain functionalities to test the reports related to rewards efficiently.
- There was a considerable need for testing to be performed with multiple reports available.

TECHNICAL SOLUTION

The project followed the Agile methodology. Collaborating with the customer and development vendor, XTIVIA successfully addressed the challenges listed above by collaborating with the customer and development vendor.



XTIVIA's QA team collaborated with the client's QA team and data engineers to understand the requirements and critical reward calculations. The QA team was ahead in providing an effective testing solution amidst many uncertainties in Data Migration implementation. As part of this engagement, XTIVIA focused on the following areas:

- Identify the dependencies on different data sources/tables
- Understand the data flow and the lightweight transformation that happens after the data is consumed
- Develop comprehensive testing artifacts to ensure no functionality is left untested
- Prepare optimized SQL queries to validate the data
- Identify the exhaustive test data set to ensure its correctness
- Arrive at an automated solution for validating millions of records
- Provide functional guidance to the client QA teams

BUSINESS RESULT

XTIVIA's testing team ensured the data had been successfully migrated to the cloud database, certifying the data correctness and flow of live information into the systems. As a result, various end customers of our client seamlessly used the existing legacy applications consuming this data.

KEYWORDS

Data Migration, Oracle, Amazon Redshift, SQL Workbench

SOFTWARE

Oracle, Amazon Redshift, SQL Workbench, Excel Macros

ABOUT XTIVIA

XTIVIA is a proven technology integration and innovation company known for delivering leading-edge technology solutions to our clients' specific requirements, regardless of project complexity. We bring next-level business operations to reality through Application Development, Business Intelligence, Data Warehousing, Database Support & Management, Enterprise Information Management, Digital Experience Solutions and Enterprise Resource Planning. Our success stems from a demonstrated ability to deliver deep expertise via professional services, empowering clients to leverage their chosen technology successfully, competitively and profitably. XTIVIA has offices in Colorado, New York, New Jersey, Missouri, Texas, Virginia and India. www.xtivia.com