

Analytics Validation to Build Trusted Dashboards & Reports

LANGUAGES/ FRAMEWORKS/ TOOLS/ TECHNIQUES

Data profiling was performed using a toolkit developed by Ultronauts in R. The client's production system uses Python and R Cloud Functions on Google Cloud Platform, leveraging data sources in GCS buckets and Bigquery, and providing visualization via a scalable R flexdashboard.

**DEV TIME REDUCED
BY ORDER OF
MAGNITUDE**

**HUNDREDS OF
HRS/MONTH OF
STAFF TIME SAVED**

SITUATION

Client is a F500 consumer products company with a global retail and ecommerce footprint. The ecommerce analytics group wanted to build rigorous scorecards to drive product marketing decisions, making it clear exactly how trustworthy each KPI was as the quality of inputs changed over time. With up to 120 KPIs on each of 6 scorecards, calculated based on inputs from approximately 150 third party data sources, this was a substantial undertaking. There were no data dictionaries for the data sources, and quality checks needed to be developed for incoming data and the scorecards. Even a single error in one KPI could result in a significant negative impact on the business.

ENGAGEMENT

Ultronauts deployed a specialized data quality engineering team to assess the feasibility of creating the scorecards and to establish automated quality checks so the trustworthiness KPIs could be determined in real time. First, the team determined whether it was even possible to build each element in the desired scorecards by sampling and profiling the 150 data sources. Then the team developed robust quality checks to validate the inputs and calculations associated with each of the KPIs, and finally, automated KPI scorecard generation with built-in end-to-end tests.

RESULTS

Ultronauts helped reduce the development time for the scorecards by an order of magnitude, and implemented automated generation and validation of KPIs which is saving the client hundreds of people-hours every month. By using a value-first agile approach, Ultronauts was able to provide a rapid prototype to the business prior to deploying the scalable system to the cloud,

ensuring that the final product met the needs of the business leaders using the insights.

Ultronauts is now working across multiple lines of business to validate and automate business dashboards and scorecards, and advising the development of an enterprise wide data quality program to help accelerate the client's digital transformation initiatives.