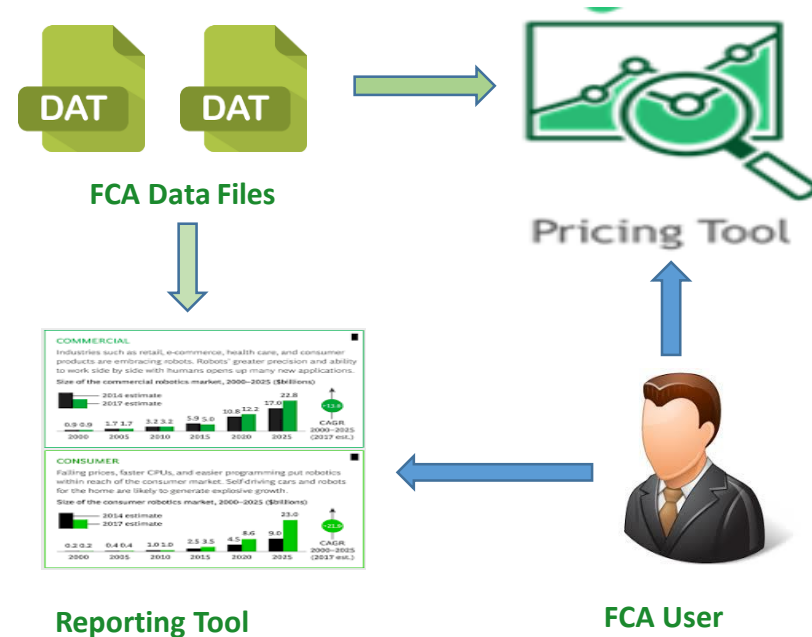


Pricing Tool Development for leading Automotive Maker in Europe

A Leading Consulting Group & FCA

THE CLIENT PROBLEM STATEMENT

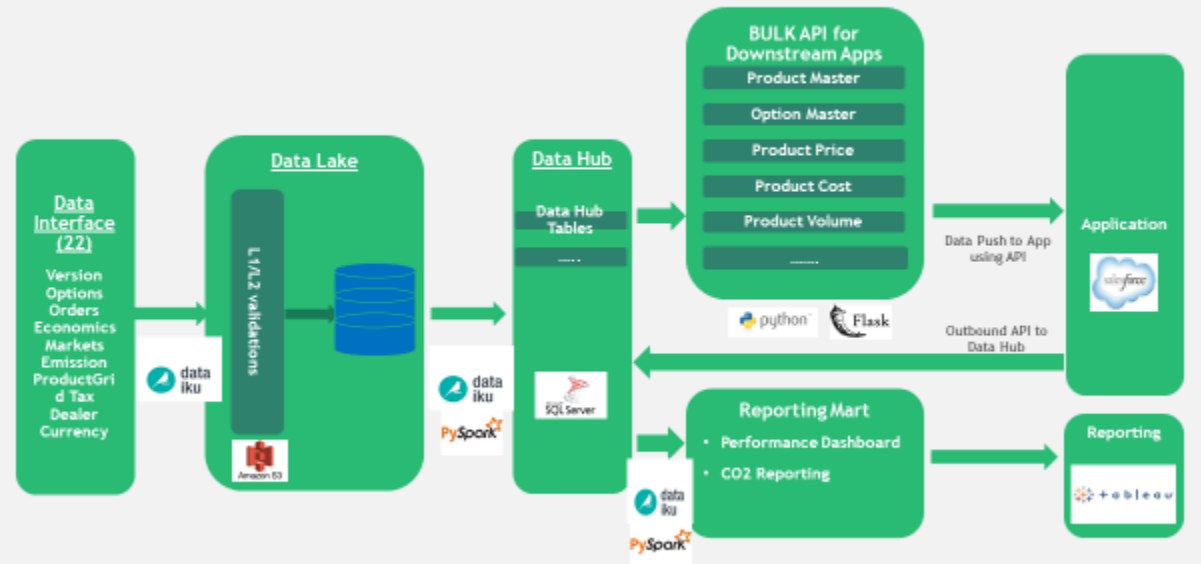
- The client requires an application to approve its entire range of cars based on the new fuel efficiency and emissions testing procedure called WLTP (Worldwide harmonized Light vehicles Test Procedure).
- The tool should simulate the CO2 emissions based on the car configuration chosen by the FCA users and support the pricing definition for the vehicles.
- Seamless flow of data to the application required to support accurate pricing of the vehicles



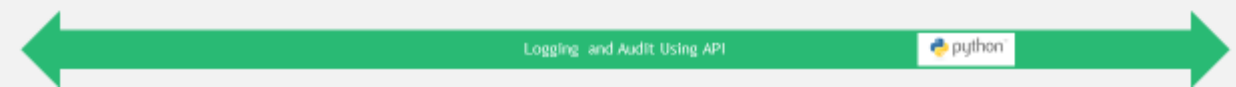
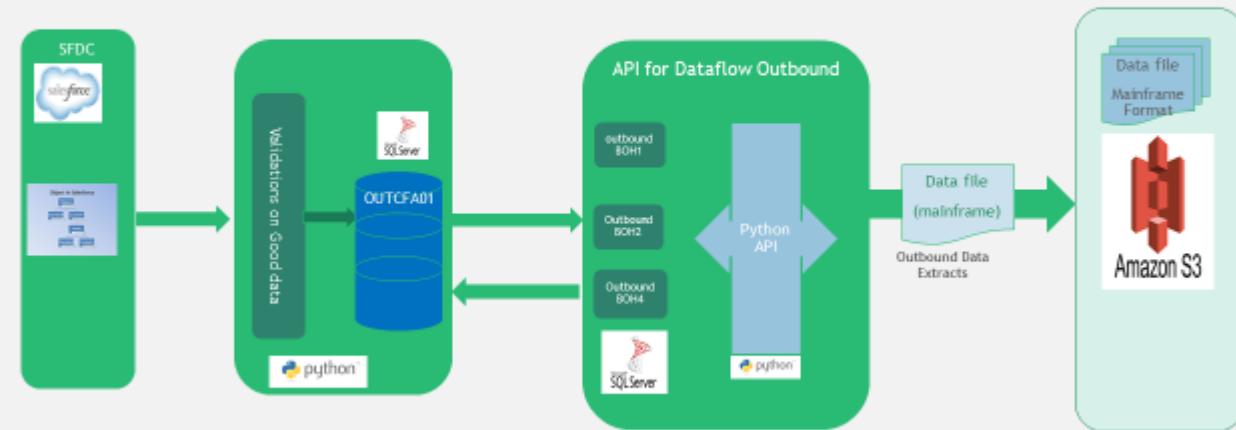
The Solution

- Developed the Data Hub for access to data by the Salesforce application
 - Data Model created for Data Hub and Reporting Mart
 - Data files received from FCA stored in Amazon S3 Data Lake
 - Data validations, Quarantine data and ETL Transformation done using DataIKU recipes and PySpark
 - Dataiku Scenarios created for scheduling jobs
 - Bulk API developed in Python for Data flow between data hub and SFDC
- Reporting Data Mart created for providing insights on
 - Performance of Car models across markets
 - Car Options Combination Matrix
 - CO2 Impact on the Car Sales across markets

High Level Data Flows



Outbound Interface : Logical Model using PythonAPI



Technology Stack



- Dataiku DSS v4.1.2 - Data science platform with strong data integration capabilities used to build the data product.



- PySpark Recipes created in Dataiku for Data ingestion and ETL. Dataiku Scenarios built for scheduling recipes.



- Good data and Quarantine data files from FCA stored in Amazon S3.



- Data persisted in SQL Server 2017 for Data Hub and Data Mart

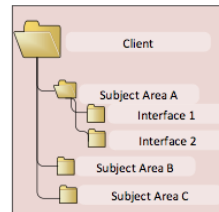
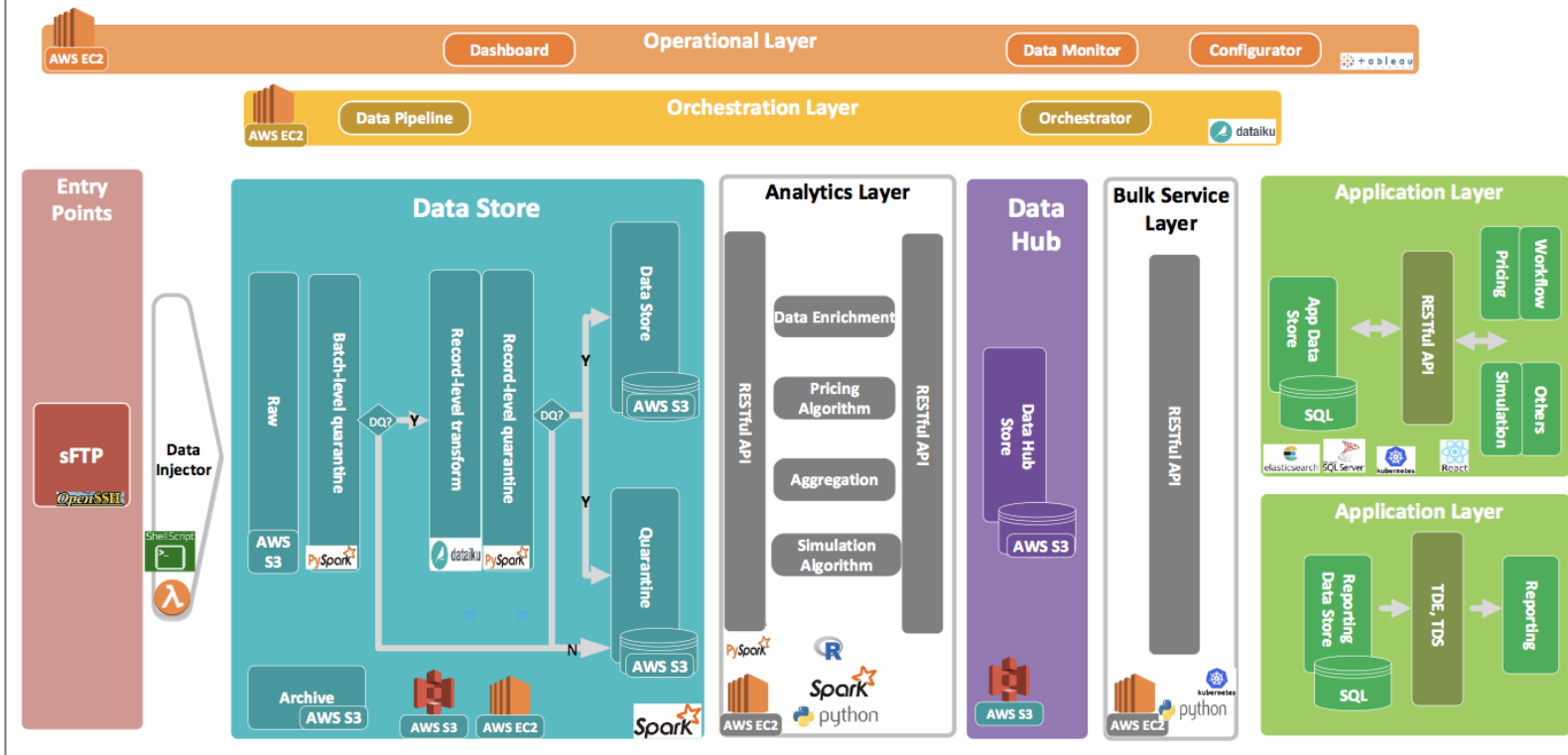


- Python API built for data sync b/w Data Hub and Salesforce



- Python recipes created in Dataiku for automation

End-to-end flow



- Data Injector**
- Checksum
 - Re-formatter
 - Dynamic Router
 - Tracing / Logger
 - B-to-Tx converter
 - File mover / Archive

- Data Lake**
- As-is (raw) data
 - Enriched
 - Quality and compliance check

- Business Rules Layer**
- Machine learning Algorithms
 - Data science algorithms
 - Other business logics

- Data Hub**
- Enriched data
 - Post business process data

- Data Service Layer**
- Secure access to data
 - Can be open to applications or external users

Business Outcome

- Efficient Pricing tool provided to users for creating Pricebooks for car models
- Centralised repository for Performance and CO2 related KPIs allowing dealers to monitor the Sales in their markets
- Accurate pricing of car models as per new WLTP norms
- Empowered data visualization reporting for better decision making

The screenshot displays the FCA WLTP Pricing application interface. At the top, the FCA logo and navigation menu are visible, including 'Price Books', 'Cost Sheets', 'Grid Data', 'Reporting', and 'Chatter'. The main header shows 'Cost Data has been updated' with buttons for 'Load New Data' and 'Show what's different'. The user is logged in as 'OWNER: Ravi Kumar (hq user)' and is viewing 'Scenario-1'.

The interface is divided into several sections:

- TASKFLOW:** A sidebar on the left with options like 'PRICE BOOK INFO', 'VERSION SELECTION', 'OPTION CONFIGURATION' (highlighted), 'PRICE WALK', and 'PRICE SETTING'.
- Filters:** A panel on the left for configuring filters such as Year, Brand, Model, and Version.
- Volume by Model/Country:** A map of Europe with Italy highlighted, showing sales volume data.
- Version-Mix & Price Comparison:** A chart showing price and CO2 emissions for various models and versions.
- Option-Take rate & Price Comparison:** A chart showing the take rate and price for different options.
- Financial Driver Tree - Price Mix Report:** A bar chart at the bottom showing the contribution of different price mix components.

The main table displays the following data:

Code	Description	Max Cost	CO2 (g/Km)
21K	Sincom - Special series	212	215
1	PVP Base Version	1	1
-	CO2 (BV + Tassativi)	133	111
0	Tassativo cost	0	0