



# DATA VIRTUALIZATION SOLUTION - MARKET SHARE & FLEET/REVENUE FORECASTING

## ORGANIZATION

Our client is an international car rental and fleet-management service company that serves millions of customers annually with 5,000,000 vehicles throughout the past five years in more than 15,900 global locations. To simplify the operational and financial risk, the company licenses its brand out to roughly 60 international franchises. Additionally, the client also serves “Insurance Replacements”—for insurance companies such as All-State and State Farm to a wide range of corporate customers.

For the past decade, our client’s goal was to be the No-1 market player. They embarked on a digital transformation journey in 2016 to streamline processes to connect to customers and partners and win back customers to reclaim the No-1 position again in the International Market.

## CHALLENGE

As part of their digital transformation initiative and due to COVID, our client needed to quickly implement a market share & forecasting dashboard for “C-Suite” as part of the recovery path. The solution required a robust data virtualization architecture to address such needs to eliminate the time-consuming data collection, extract, transformation, and dashboarding layer and avoid multiple later/physical copies of the data. Technical guidance/recommendations on best practices for maintaining the solution and execution are also needed on an urgent basis to explore new data virtualization areas.

As XTIVIA worked with the client to implement a turn-key Data Virtualization Solution, the technical challenges encountered were the following:

- Analyst, C-Suite needed data to support decision
- Data is massive; billions of forecasting rows needed for a quick data engineering solution
- Data is available in multiple forms and different databases and file systems
  - o Daily forecasting data in a different format from 4 different GDS (Global Distribution Systems)
  - o Fleet master data available in MDM-Oracle DB
  - o Fleet activity data available in AWS-Redshift
  - o Yearly flight schedule data available on filesystem from the third party
- Physical data warehouse building needs time and requires clear standard data model definition but visualization need is to continue evolving
- Multiple copies of data required for typical data warehouse/cube approach
- Faster visualization refresh needs with real-time data

## TECHNICAL SOLUTION

To continue pursuing recovery, our client wanted the room to innovate and rapidly create a cloud-based data virtualization solution that provides the best service in the industry by connecting multiple data sources to create a common C-Suite dashboard. With Data Virtualization implementation from XTIVIA, our client made its vision of data visualization/dashboard a reality.

XTIVIA used Dremio – a data virtualization tool and data lake engine to support the client’s data analytics vision. The implementation was completed in 6 weeks which included an implementation plan and roadmap that consisted of the following task:

### BY THE NUMBERS:

1,000,000 Active Vehicles | 400,000  
Vehicles Acquired and Sold Annually  
87% Daily Utilization

### KEYWORDS

Data Virtualization, Dremio

### SOFTWARE

Dremio, Oracle DB, Amazon S3,  
Amazon RedShift, EC2, Flat Files

### HARDWARE/PLATFORM

Amazon MarketPlace  
- Dremio on EC2

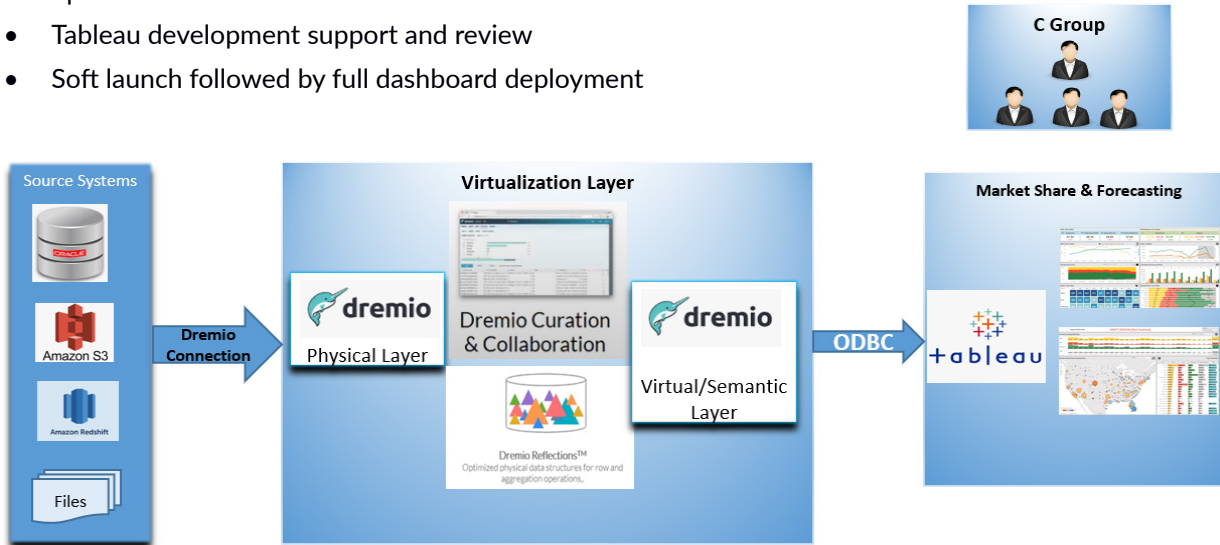


**dremio**



## TECHNICAL SOLUTION (CONTINUED)

- Dremio tool procurement through AWS-Marketplace
- Architecture and Design
- GDS data consolidation and curation through Dremio
- Fleet forecasting data curation based on location fleet availability and future flight schedule data
- Semantic layer modeling for Visualization need
- Data Reflection creation to optimize physical data structures for row and aggregation operations & faster refresh
- Tableau development support and review
- Soft launch followed by full dashboard deployment



### XTIVIA's solution included:

- Working with stakeholders to define data virtualization solution requirements: Dremio environment setup, architecture & design
- Designing and implementing a data virtualization solution through AWS Marketplace: created application permission, data source connections, reflection, and logical semantic layer
- Customizing the semantic layer easily as per visualization need
- No creation of physical copy of data at multiple places
- Collaborative data curation on live data
- Elastic execution through multiple nodes on AWS-cloud
- Optimized push down queries for faster data refresh

## BUSINESS RESULT

Through our client's project, XTIVIA found new ways to make information systems more productive and collaborative. Our team Implemented a scalable and extensible data virtualization solution with Dremio through AWS-Marketplace that aligns to the client's data virtualization vision and meets future demands, including:

- Quick data delivery without heavy ETL/Data Engineering process
- C-Suite dashboard delivery with flexibility to make changes as quickly as possible
  - Bird's eye view of market share for prior week/month v/s up-coming week/month
  - Competitor market share trends and revenue trends



## BUSINESS RESULT (CONTINUED)

- Location wise market penetration & opportunity trends
- Trends v/s fleet availability
- Competitor wise forward-looking booking
- Rates by competitor brands at car class level
- Data Virtualization tool which can work with any data source
- Works with any BI tool – seamless/out of the box connectivity to Tableau/Power BI
- No ETL, no data warehouse, no cubes, or multiple/physical copy of data
- Makes data self-service and collaborative
- Makes big data feel small and quicker/faster data refresh
- Live data changes/curation
- Support typical SQL for easy implementation
- Robust UI for data changes, transformation within semantic layer

## XTIVIA OVERVIEW

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](http://www.xtivia.com)