

Revolutionizing Market Share Insights: Data Virtualization for Fleet Management

ORGANIZATION

Our client, a global leader in car rental and fleet management, operates a vast network of over 15,900 locations worldwide with a fleet exceeding 5 million vehicles. Serving millions of customers annually, they cater to individual consumers, corporate clients, and major insurance providers like Allstate and State Farm. To maintain their leadership position and enhance operational efficiency, the company embarked on a transformative digital journey aimed at optimizing processes, improving customer connections, and strengthening market presence.

CHALLENGE

The client faced the pressing need to implement a robust market share and forecasting dashboard for their C-suite as part of their COVID-19 recovery strategy. With diverse data sources and complex operational requirements, they encountered significant challenges:

- **Massive Data Volumes:** Billions of rows of forecasting data required consolidation, including five years of historical data for rental and reservation reporting.
- **Diverse Data Sources:** Data resided across multiple platforms:
 - Daily forecasting data from four Global Distribution Systems (GDS).
 - Fleet master data stored in Oracle DB.
 - Fleet activity data in AWS Redshift.
 - Yearly flight schedules provided as external files.
- **Time-Consuming Processes:** Traditional data warehouse approaches involved extensive ETL efforts and physical data copies, delaying insights.
- **Evolving Visualization Needs:** Rapidly changing requirements for dashboards necessitated a highly flexible and adaptable solution.
- **Real-Time Data Needs:** The absence of real-time data synchronization hindered timely decision-making and operational responsiveness.

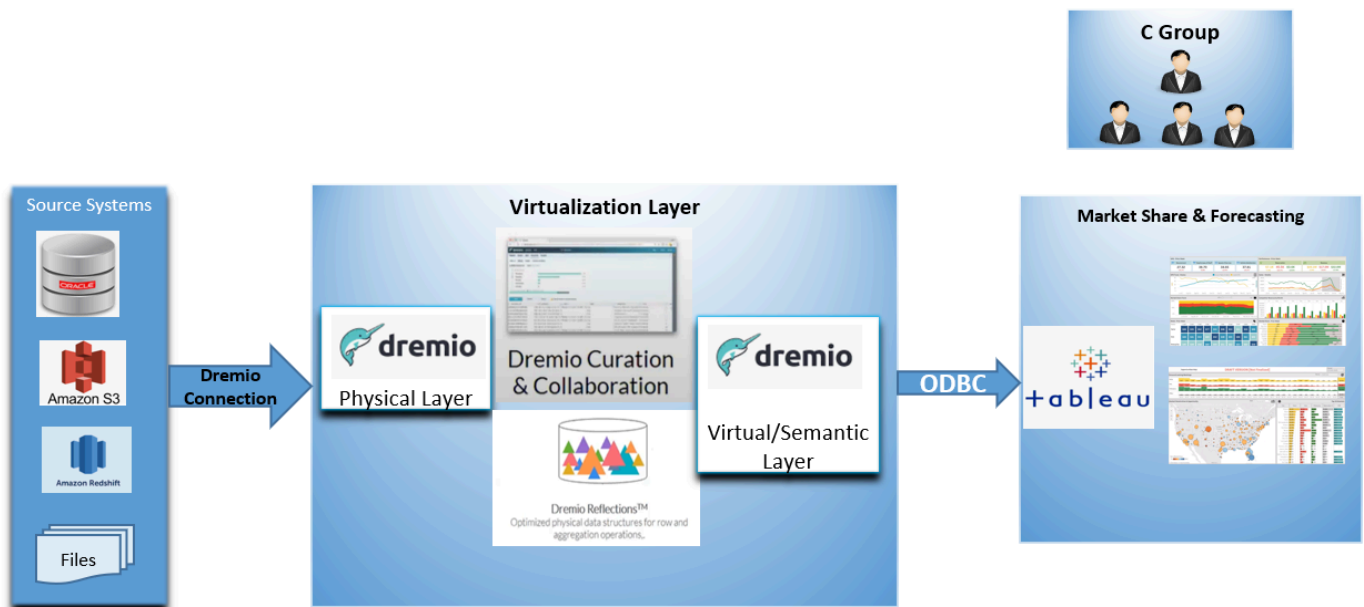
TECHNICAL SOLUTION

XTIVIA delivered a scalable, cloud-based data virtualization solution using Dremio through AWS Marketplace to unify and accelerate data integration and reporting processes. This approach eliminated reliance on time-consuming ETL processes and enabled live data visualization for real-time decision-making.

Implementation Details:

XTIVIA's solution was implemented within six weeks, encompassing:

- **Collaborative Stakeholder Engagement:** Defined data requirements, including daily forecasting and fleet activity, in close collaboration with client teams.
- **Dremio Integration:**
 - Procured and deployed Dremio via AWS Marketplace on EC2.
 - Configured elastic execution nodes for scalable and efficient data processing.
- **Optimized Data Management:**
 - Curated and consolidated data from GDS systems, Oracle DB, and Redshift to create a unified view.
 - Curation of fleet forecasting data based on location-specific availability and flight schedules.
- **Semantic Layer Customization:** Designed a flexible semantic layer to adapt to evolving dashboard requirements without creating multiple physical data copies.
- **Data Reflections and Query Optimization:**
 - Created data reflections to accelerate query performance and refresh rates.
 - Implemented optimized pushdown queries for faster data retrieval and processing.
- **API Development Across Layers:**
 - *System Layer:* Configured OData APIs to establish robust external data connectivity.
 - *Experience Layer:* Designed APIs for seamless user interactions and validation.
 - *Process Layer:* Developed APIs for real-time data synchronization and response workflows.
- **Dashboard Development and Deployment:** Supported Tableau dashboard development and conducted a phased rollout, including a soft launch and full deployment.



BUSINESS RESULT

XTIVIA's innovative data virtualization solution empowered the client to achieve operational excellence and strategic agility:

- **Accelerated Decision-Making:** Delivered real-time insights for market share and revenue forecasting, enabling faster, data-driven decisions.
- **Cost Efficiency:** Eliminated reliance on traditional ETL processes, reducing infrastructure costs.
- **Enhanced C-Suite Engagement:** Provided executives with intuitive dashboards featuring live data updates, supporting proactive decision-making.
- **Scalability:** Positioned the client to handle increasing data volumes seamlessly, supporting future innovation and growth.
- **Operational Agility:** Enabled rapid dashboard updates and data curation, ensuring responsiveness to market dynamics.
- **Comprehensive Insights:** Delivered detailed analyses, including:
 - Market share trends by location and competitor.
 - Fleet availability and utilization metrics.
 - Revenue forecasts and competitor pricing comparisons by car class.

KEYWORDS

Data Virtualization, Dremio Integration, Real-Time Market Insights, API-Driven Analytics, Tableau Integration, Digital Transformation

SOFTWARE

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

HARDWARE/PLATFORM

Amazon Marketplace – Dremio on EC2, Azur

ABOUT XTIVIA

At XTIVIA, we've provided IT solutions and consulting services for over 30 years. We offer a wide range of services, including technology assessments, IT service and asset management, software development, data analytics, cloud migration, DevSecOps, ERP, and enterprise content management. Our team of experts is dedicated to each discipline, ensuring that our clients receive the best possible service. We've partnered with industry leaders to bring our clients the latest solutions. Through strategic acquisitions, we've acquired talented people who are experts in their industries, passionate about what they do, and committed to providing exceptional service to our clients. Whether you need to improve your IT infrastructure or implement new software solutions, XTIVIA is here to help you achieve your business goals. Contact us today to learn more about our services. XTIVIA has offices in Colorado, New York, New Jersey, Texas, Virginia, and India. www.xtivia.com