



Informatica®

avis budget group

## Connecting a Global Fleet:

Avis Budget Group Optimizes Vehicle Rental Services Using Real-Time Data

*"Informatica lets us use real-time data to optimize fleet management and telematics so that we can save money and drive our bottom line."*

**Christopher Cerruto**

VP of Global Enterprise Architecture and Analytics  
Avis Budget Group

### Goals

Connect a massive fleet of 650,000 vehicles in real time and with a complete global view to enhance efficiency, reduce costs, and drive revenue

Reduce business risk by profiling and governing telematics data from vehicle GPS and navigation systems and uncovering data quality issues early

Document core assets such as fleet and telematics data while capturing business context from subject matter experts

### Solution

Deploy Informatica solutions on AWS to operationalize data and perform real-time analytics as part of a next-generation platform

Leverage Informatica Big Data Management to enable faster, flexible, and repeatable big data ingestion and integration

Organize fleet and telematics data using Informatica Enterprise Data Catalog to provide visibility into data location, lineage, and business context

### Results

Supports global vehicle analytics with an end-to-end data pipeline, giving fleet managers faster access to track vehicles in real time

Mitigates risk by improving data quality and governance, helping to ensure that fleet data is complete and in the right format

Increases productivity by enabling business users to search for, locate, and understand data assets on their own, with a line of sight into data lineage

## Business Requirements:

- Execute full-scale production pilots in short timeframe to keep pace with industry
- Accommodate thousands of fields of sensor data per vehicle in real time
- Scale quickly and onboard new IoT devices rapidly as technology evolves

## About Avis Budget Group

Avis Budget Group is the American parent company of Avis Car Rental, Budget Car Rental, Budget Truck Rental, Payless Car Rental, Apex Car Rentals, Maggiore Group, and Zipcar. Headquartered in Parsippany, New Jersey, Avis Budget Group has 30,000 employees and operates in 180 countries.



## Informatica Success Story: Avis Budget Group

Avis Budget Group is a leading general-use vehicle rental company, operating some of the most recognized brands in the industry, including: Avis, Budget, and Zipcar. The company and the industry in which it operates are changing quickly as new competitors emerge, challenging Avis Budget Group to innovate and offer customers new experiences and digital services.

Reinventing vehicle rental with infotainment and virtual local guides, digitizing the business with alerts and predictive maintenance, and developing new service models that include fleet tracking and analytics are just a few elements of Avis Budget Group's approach to differentiation. Achieving these goals means leveraging real-time data from and about its diverse fleet of 650,000 vehicles, including telematics data from GPS and navigation systems, information from Internet of Things (IoT)-enabled sensors, and ever-advancing technology from vehicle original equipment manufacturers (OEMs).

"Understanding every vehicle globally is core to what we do and to the concept of a connected fleet," says Christopher Cerruto, VP of Global Enterprise Architecture and Analytics at Avis Budget Group. "We want to know the attributes of every vehicle in real time, whether it's mileage, tire pressure, or GPS coordinates. Then we can make better fleet management decisions and even send signals back to the car to lock, unlock, or immobilize. To make this connected future a reality, we set out to build a next-generation platform and enterprise data hub, knowing that Informatica could help."

## Bringing 70 years of legacy systems together

In addition to forming a basis for enhanced services, analyzing fleet data in real time brings a host of management benefits that can reduce costs and enhance the bottom line. For example, the Avis Budget Rental division can consider mileage optimization when deciding which vehicle to rent to a customer, better understand which vehicles are at risk for mechanical or electrical problems, and optimize timing for vehicle resale.

Having been in business for more than 70 years, its infrastructure was anchored to legacy systems, making data management difficult. Historically, Avis Budget Group operated as two separate companies, North America and International, which led to two massive data silos with no ability to get a real-time, enterprise view of fleet data. The organization had a breadth and depth of big data, which it needed to manage, ingest, and normalize at a rapid pace of change. With limited event handling and publishing and no real-time operational analytics, Avis Budget Group experienced performance and scalability challenges.

In addition to pulling in data from various enterprise systems, Avis Budget Group needed to profile and govern telematics data to uncover any data quality issues that might introduce business risk. It also wanted to document vehicle attributes and telematics data in an enterprise data catalog where it could provide business context and capture "tribal knowledge" from subject matter experts. Finally, it wanted to speed time to market for advanced analytics by giving end users simple tools to prepare data from the catalog for self-service analytics.



*"As data comes in from connected cars, Informatica allows us to profile, normalize, and catalog it so that a business analyst can find the information they need when they need it and take action."*

**Christopher Cerruto**

VP of Global Enterprise Architecture and Analytics, Avis Budget Group

## A better model for fleet management

Avis Budget Group decided to turn its data into a clean and usable data lake to pilot its connected fleet. The company built a cloud-based architecture that combines solutions from Informatica and Amazon Web Services to ingest, catalog, operationalize, and perform real-time analytics on connected car data as part of a next-generation platform.

"Informatica has a reputation for being best-in-class when it comes to data management, and they've done a great job evolving their products for cloud," says Cerruto. "We saw lots of opportunities to plug Informatica tools into our AWS infrastructure to solve various problems, but we weren't exactly sure how it was all going to work. So, we gave Informatica a few of our central use cases, and within six weeks they presented a live demo with our data in our environment showing us exactly how the software would meet our business needs. Informatica turned a problem into a solution in a very short period of time."

Real-time data from vehicles and source systems such as Oracle, IBM IMS, and IBM DB2 databases now streams into Informatica Big Data Management, enabling fast, flexible, and repeatable big data ingestion and integration. Informatica Big Data Quality automatically enforces predefined data quality rules, while Informatica Axon Data Governance automates data governance, helping to standardize processes and formalize data stewardship roles.

Fleet and telematics data is then organized and stored using Informatica Enterprise Data Catalog to provide end users with visibility into data location, lineage, and business context. Informatica Enterprise Data Preparation provides simple self-service access with visualizations, allowing business users to prepare cataloged data for analysis via self-service. Analysts then run machine learning models against the data using AWS SageMaker for real-time insights.

"Making sense of telematics data isn't as simple as just dropping it in a database," says Cerruto. "As data comes in from connected cars, Informatica allows us to profile, normalize, and catalog it so that a business analyst can find the information they need when they need it and take action."

## On the road to advanced vehicle analytics

With its new cloud-based data and analytics architecture, Avis Budget Group is leading the rental industry in global vehicle analytics with an end-to-end data pipeline, giving fleet managers faster access to the data they need to maximize fleet utilization.

Cerruto explains, "If a customer arrives at the airport and we have two cars of the same make, model, and year in the lot, but one has higher mileage than the other and we know that customer is a high-mileage driver, it makes sense for us to provide a car with lower mileage. Then, when that the car is returned, we have balanced those miles across the vehicles. Informatica lets us use real-time data to optimize fleet management and telematics to help us save money and drive our bottom line."





### Inside The Solution:

- Informatica Axon Data Governance
- Informatica Big Data Management
- Informatica Big Data Quality
- Informatica Enterprise Data Catalog
- Informatica Enterprise Data Preparation

*"We envision a world where our fleet is completely connected, integrated, and on-demand. With Informatica and AWS, we're leading the way in terms of how we can use data to drive success for the company and respond quickly as demands change."*

#### **Christopher Cerruto**

VP of Global Enterprise Architecture and Analytics, Avis Budget Group



As the industry continues to change and vehicle manufacturers release new technologies, Avis Budget Group will leverage dynamic mappings in Informatica to quickly adjust data integrations, accelerating time to market and avoiding time-consuming coding projects. It can ingest disparate data sources faster while reducing risk by improving data quality and governance, making sure data is complete and in the right format.

"We are now dealing with terabytes of information moving rapidly between vehicles and the cloud," says Cerruto. "Informatica helps us get that data in, access it, understand it, and react to it in real time. We're also pushing more and more data back out to the customer via our mobile app."

The solution also increases productivity by enabling business users to search for, locate, and understand data assets on their own, with a reliable line of sight into data lineage. And with the ability to transform raw big data into analytics-ready datasets without assistance from IT, business users can proceed directly to analysis, reducing churn and accelerating time to market for insights.

"Our business analysts run analytics across our fleet systems, our revenue management, our pricing, and our marketing," says Cerruto. "Many of them want to know what's going on with the vehicles, but they're asking different questions. Informatica Enterprise Data Preparation gives them easy, visual access into the data and lets them go fishing in our data lake, which is pretty cool."

### Outpacing the competition

Avis Budget Group now has more than 150,000 connected cars, or approximately one-quarter of its global fleet. Within the next two years, every car will be connected, and the company will be able to leverage its data pipeline to not only better manage its fleet, but to also provide customers with streamlined rental and reservation experiences. "We went from a world of batch data and warehouses, to having real-time insights that let us manage our fleet, so cars are ready for customers when and where they need them," explains Cerruto.

"We envision a world where our fleet is completely connected, integrated, and on-demand. With Informatica and AWS, we're leading the way in terms of how we can use data to drive success for the company and respond quickly as demands change," Cerruto concludes.

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