STREAMANALYTIX

Real-time Driver Profiling & Risk Assessment for **Usage-based Insurance with StreamAnalytix**

The auto insurance industry is rising up to meet consumer expectations of personalization and flexibility in all aspects. To keep up with the new digital consumer and remain competitive, auto insurers are increasingly investing in the connected car solutions to offer simplified, transparent, and flexible products and pricing options.

Usage-based insurance is one such innovation that allows the use of analytics to create highly personalized and dynamic plans based on not just the driver's age and other demographics, but also accounts for the driver's behavior, risk attached to a vehicle, and external factors such as driving conditions and weather.

About the Customer

This leading auto insurance provider chose StreamAnalytix to ingest, transform, enrich, analyze and store automotive telematics data in real time to build an end-to-end analytics application for driver profiling & individual risk assessment, and subsequently offer dynamic, usage based, plans to its customers.

Solution Highlights

Real-time ingestion of telematics and sensor data

The insurer uses a telematics device to capture and transmit vehicle performance, usage, and driver behavior data from various sensors in the car. The StreamAnalytix based solution enables real-time ingestion of this sensor data using AWS IoT gateway. The device captures data points such as:

Diver behavior:

Rapid acceleration, hard braking, hard cornering, air bag deployment and more and more

Vehicle sensor data:

Oil temperature, engine performance, brake wear, and tire

Usage data:

Mileage, location, routes used

Data processing, as it arrives

In-memory data transformation, data blending and data enrichment is performed as driver behavior, usage, and vehicle data arrives:

Combines real-time behavior and vehicle sensor data with risk history

Blends driving behavior data with other real-time data sources such as syndicated public data marts & services like weather data

Enriches data with customer information such as contact, location, age, past purchases, past claims, and more

Automated risk analysis through machine learning

The ingestion and enrichment stages provide a pre-prepared, and formatted, rich array of key attributes needed for the predictive machine learning models running on Apache Spark orchestrated by StreamAnaytix, to assess and predict individual risk scores based on real-time and historical data, resulting in individually calculated risks scores.

Classification of drivers as safe or risky and the quantification of risk score is based on current driving behavior, historical behavior, and supplemental data flows like usage data, geographic location, vehicle type, vehicle performance, and third-party data like driving conditions and weather data.

StreamAnalytix also provides easy visual dev-ops interfaces for periodic refresh of the models based on varying patterns of data or drift in user behaviors. If necessary and when appropriate, the insurer can also configure StreamAnalytix to deploy real-time continuous learning models like K-means clustering for this use case.

Smart alerting

The application creates alerts to flag risks based on altered behavior patterns as well anomalous vehicle performance.

The customers are optionally alerted in real-time on risks during driving to enable course correction and caution

Alerts for vehicle health can be created to flag predicted faults and repair needs, reducing the number of claims caused by vehicle break

Smart alert models are built to reduce false positives . For instance, a driver is braking frequently, but this is not flagged as a risky behavior, as his driving route also shows heavy snow fall explaining the need for temporarily altered driving behavior.

Results

An end-to-end, real-time analytics application for driver profiling & risk assessment to enable personalized, usage-based, insurance plans

Through driver profiling and individual risk scores, the auto insurer could now offer highly personalized insurance policies and pricing plans. Additionally, the insurance giant could now also offer predictive maintenance services, pre-empting vehicle break-downs and repair needs.

Premium adjustments and dynamic pricing

Enabled creating highly personalized premium pricing options based on :

Individual scores:

Lower insurance premiums for safe or infrequent drivers

Vehicle type and make:

Data shows people with a lower risk profile inherently choose certain types and automobile make

Geography:

Certain geographies were found to have more favorable weather as well as driving conditions, leading to lower risk. and in turn leading to lower premiums

Increased customer loyalty and claims reduction from value-added services

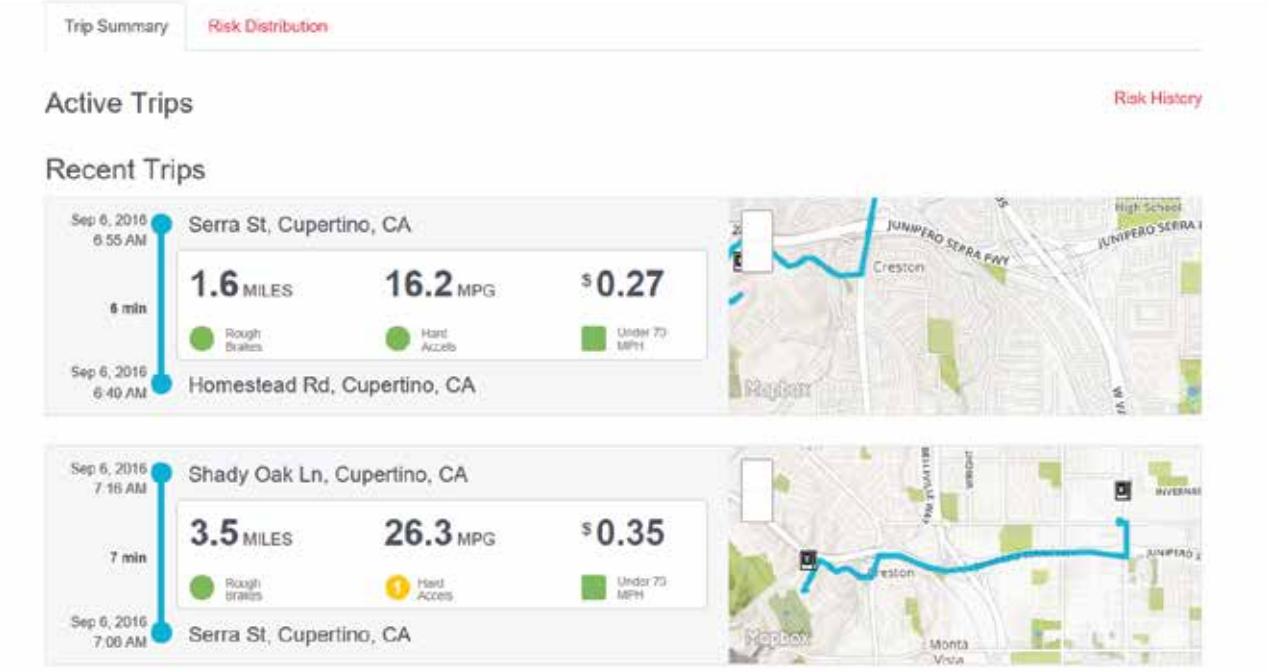
Remote vehicle diagnostics and predictive maintenance services proved to be a consumer-friendly unexpected value-addition and a driver of increased renewals. The insurer's customers provided feedback that they liked and have come to rely on the application predictions related to component failures and break-downs. which resulted in increases in preventive maintenance and reduced claims from incidents driven by vehicle malfunctions.

Risk Distribution By Geography And Vehicle Make

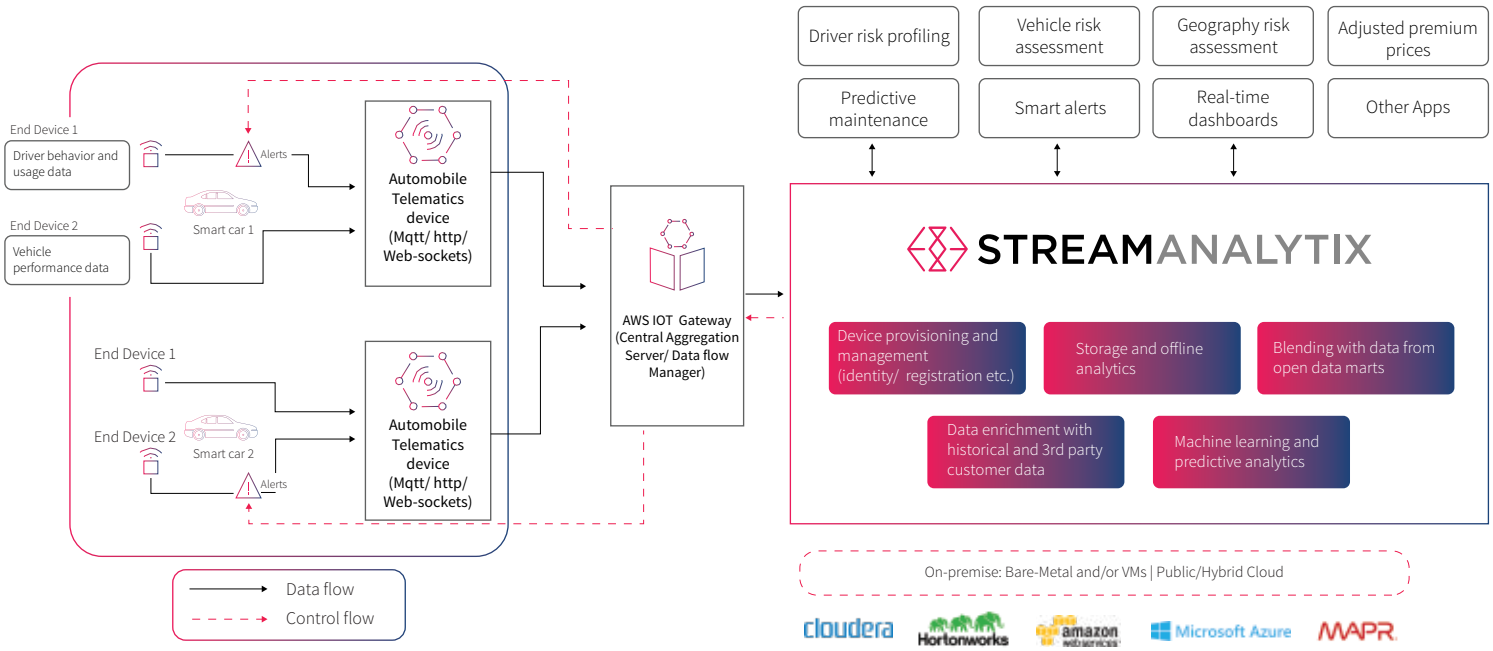
Real-time tracking

It is now easy to track driver activity and vehicle data in real-time through a custom web UI and interactive real-time dashboards. The customers can also easily track (through an installed mobile application) their own driving behavior and vehicle performance in real-time and take corrective action that can impact their insurance premium prices.

Real-time Dashboard for Active Trips



Connected Car Solution with StreamAnalytix



STREAMANALYTIX

StreamAnalytix is a unified, enterprise grade, visual platform for streaming and batch data processing. It is a one stop-shop platform for your complete data processing journey from data ingest, data processing, machine learning, action triggers, to data visualization.

Use an intuitive drag-and-drop visual interface to build and operationalize big data applications five to ten times faster, across industries, data formats and use cases.

Visit **www.streamanalytix.com** or write to us at **inquiry@streamanalytix.com**