Viaduct

INCREASING VEHICLE UPTIME & REDUCING COST OF QUALITY

VIA THE POWER OF **AI/ML** ON **CONNECTED VEHICLE** DATA

OVERVIEW

The automotive industry is being turned upside down by powerful market trends including electrification, autonomous driving, and ride-sharing. Enhanced data connectivity and the emergence of artificial intelligence and machine learning are fueling this revolution by unlocking transformative use cases in product development, supply chain, manufacturing, service delivery, vehicle maintenance, and business operations.

In this e-book, we discuss how Viaduct's solutions leverage the power of artificial intelligence and machine learning on connected vehicle data to drive real value for automotive industry stakeholders.

INTRODUCING **VIADUCT**

Who is Viaduct?

Viaduct delivers proven value to the rapidly-changing automotive industry with AI-powered applications that help OEMs, suppliers, and fleets improve product quality, streamline manufacturing, lower warranty expense, improve customer experience, and generate new revenue streams.

What Viaduct can deliver for you:

- *OEM aftersales and service organizations, as well as fleet owners, depend on **Smart Service** applications to improve vehicle uptime, lower maintenance costs, run more efficient campaigns, and create value-added services that turn cost centers into profit engines.*

- *OEMs and Suppliers responsible for design and production quality leverage our **Smart Quality** applications and Insight Exchange to identify quality issues earlier, accelerate root cause analysis for systemic issues, and improve overall operating performance.*

- *Our end-to-end machine learning **Platform** is designed specifically for automotive data. Pre-built modules that ingest, enrich, and analyze vehicle data at a production scale ensure rapid deployment. Modules are also customizable and easily integrated so customers can leverage Viaduct with their existing technology investments*
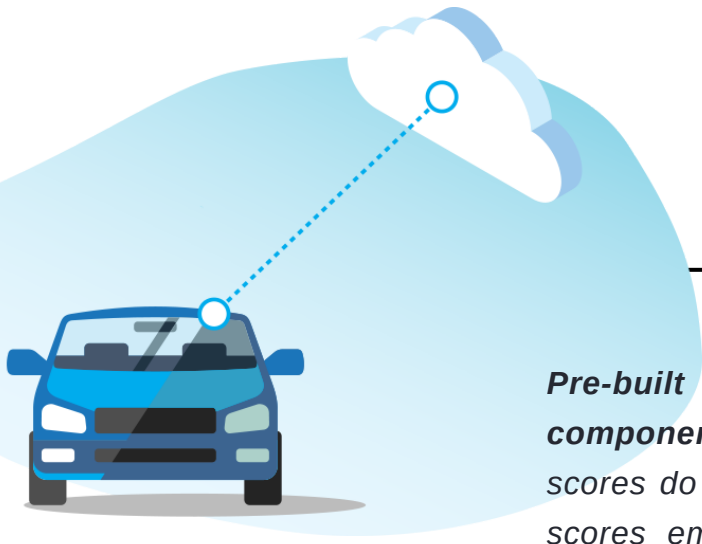
SOLUTIONS

SMART **SERVICE**

With Viaduct Smart Service applications, OEM service organizations and fleet owners leverage connected vehicle data and AI to implement advanced maintenance strategies.

No matter what your current strategies are, Viaduct Smart Service applications can improve your vehicle uptime, lower repair costs and improve service operations.

VEHICLE HEALTH MONITORING

Pre-built scorecards show Vehicle health at the component, assembly, and system level. *Viaduct health scores do more than serve up standard OEM DTCs. Health scores employ statistical methods and configurable rules that enable you to take condition-based maintenance programs to the next level. Roll-ups give a fleet or service manager a view across vehicle segments to see trends that inform driver and technician training programs.*

- *Vehicle, system, assembly, and component health*
- *Pre-built and configurable health rules*
- *Time-based trends and fleet analysis*

PREDICTIVE MAINTENANCE

Viaduct predicts likely failures before they happen with proprietary machine learning tools and techniques*.*
With high-accuracy failure predictions, OEM aftersales and service managers, along with fleet owners, can plan maintenance events, optimize part and labor availability, and decrease on-the-road failure rates. Viaduct's API will deliver predictions to any interface used by a given audience: service managers, fleet operators, and even drivers.

- *Component-level probability of failure*
- *Configurable risk thresholds and time windows*
- *Service schedule planning and integration*

CAMPAIGN MANAGEMENT

OEMs leverage Viaduct to plan and implement smarter voluntary service campaigns and recalls. Viaduct identifies vehicles with the highest risk of failing so OEMs can minimize scope, optimize timing, and increase completion rates of service campaigns. This lowers campaign costs and minimizes disruptions to valued customers. Viaduct provides complete campaign tracking tools that streamline campaign execution and compliance reporting.

- *Configurable failure modes*
- *Campaign scoping and tracking*
- *Campaign list management"*

SMART **QUALITY**

Product Development, Manufacturing and Supply Chain organizations use Viaduct's Smart Quality applications to improve product quality and reduce reliability.

Quality organizations monitor vehicles for latent quality issues so they can act before issues become widespread. Data is distilled into component, assembly, and system-level analytics that help OEMs and Suppliers reduce wasted manufacturing cycles, minimize field re-work and improve overall product quality.

EARLY ISSUE IDENTIFICATION

Viaduct helps OEMs and suppliers identify systemic problems weeks and months earlier than other systems, delivering millions of dollars in savings. *Smart Quality constantly scans incoming connected vehicle data to identify anomalies and flag potential issues across test and active-duty vehicles. Anomalous patterns are correlated to incoming repair data to isolate issues that need to be actioned. Proprietary algorithms separate signal from noise so engineers don't get buried in data.*

- *Detect suspicious anomalies among in-service vehicles*
- *Correlate issues to incoming repair data*
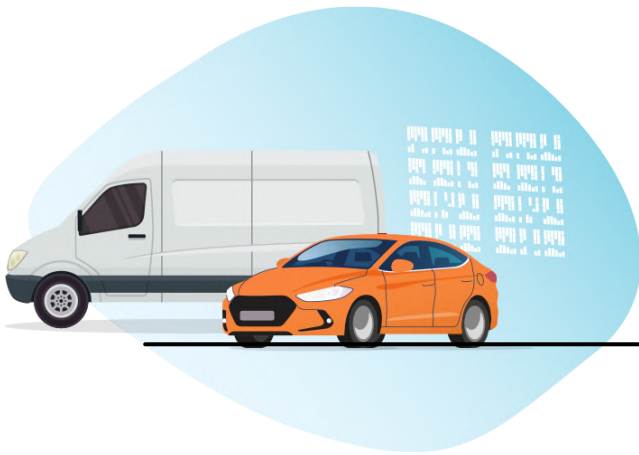- *Triage and prioritize issues for corrective action*

ROOT CAUSE ANALYSIS

As Viaduct scans for anomalies, it preserves sensor and DTC patterns that are used by engineers to do root cause analysis.

Patterns can expose correlations that aren't human detectable and can be used to generate, defend and refute hypotheses. Experts in the field of root-cause analysis agree that data-driven root cause techniques will yield better results, faster. Viaduct's rich data platform and analytic tools provide the perfect complement to manual methods.

- *Identify patterns that aren't detectable by humans*
- *Find root cause faster with data-driven techniques*
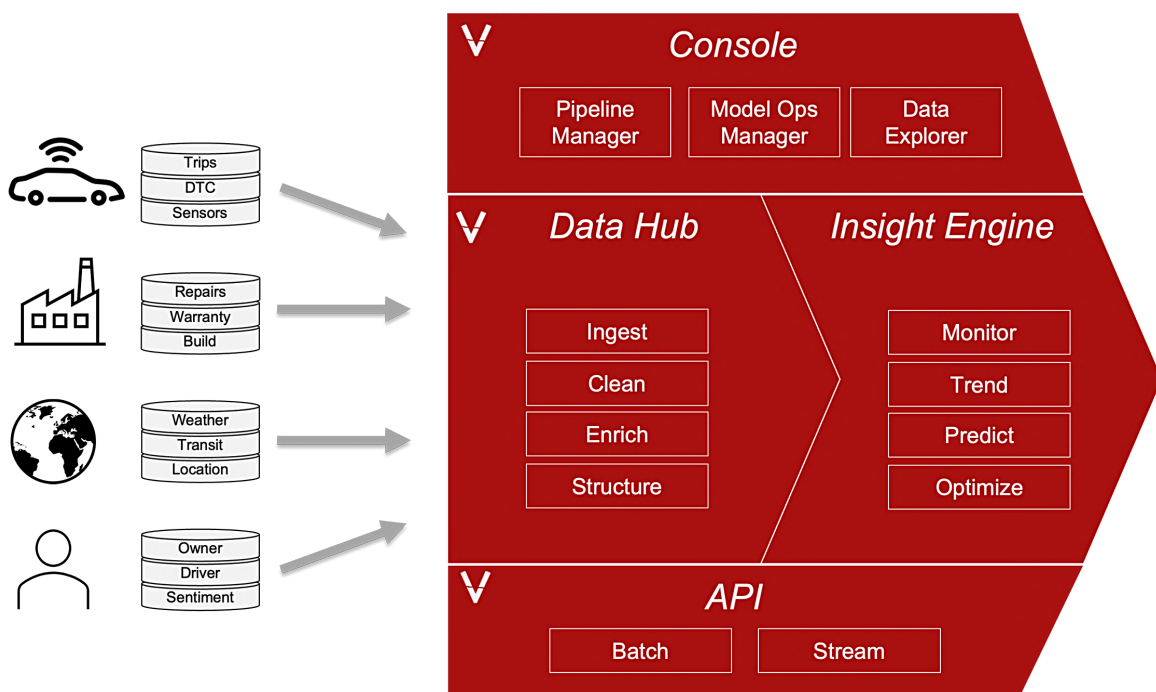
COMPONENT & SUPPLIER SCORECARDS

With a wealth of component, assembly and system-level usage data, Viaduct provides invaluable performance information to OEMs and suppliers. *OEMs compare failure rates to aid supply chain decisions and negotiations. Suppliers use component health scorecards to better understand in-the-field usage so they can improve their products.*

- *Align product specifications with real-life usage patterns*
- *Benchmark performance across suppliers to make better supply chain decisions*

VIADUCT PLATFORM

**THE FUTURE IS NOW WITH VIADUCT,
THE FIRST AUTOMOTIVE-SPECIFIC AI PLATFORM**

Transformative analytics initiatives are difficult, but we at Viaduct are experts and our technology is proven. Whether you are just getting started or you've been at this for many years and are looking to take the next step, Viaduct's powerful and flexible platform will meet your data and analytics needs.

RAPID **DEPLOYMENT**

- *Pre-Built Integration Pipelines*
- *Cleansing and Data Validation*
- *Standardized Data Model*
- *Robust Security and Governance*

EASILY **INTEGRATED**

- *Intuitive Management Tools*
- *Customizable Metrics and Reports*
- *Ad-Hoc Data Exploration*
- *Application APIs*

PRODUCTION-SCALE AI

- *Vehicle-Specific Use Cases*
- *Automated Feature Selection*
- *Robust ML Lifecycle Management*
- *Supports Expert-in-the-Loop Processes*

SAFER, SMARTER, MORE PERSONALIZED VEHICLES.

We are passionate about transformative solutions enabled by connected vehicle data, and are excited to collaborate with OEM and Supplier partners to implement them at scale.

Ready to significantly increase your vehicle uptime, reduce your cost of quality, and improve customer satisfaction?

CONNECT WITH US

contact@viaduct.ai   ●   **www.viaduct.ai**