

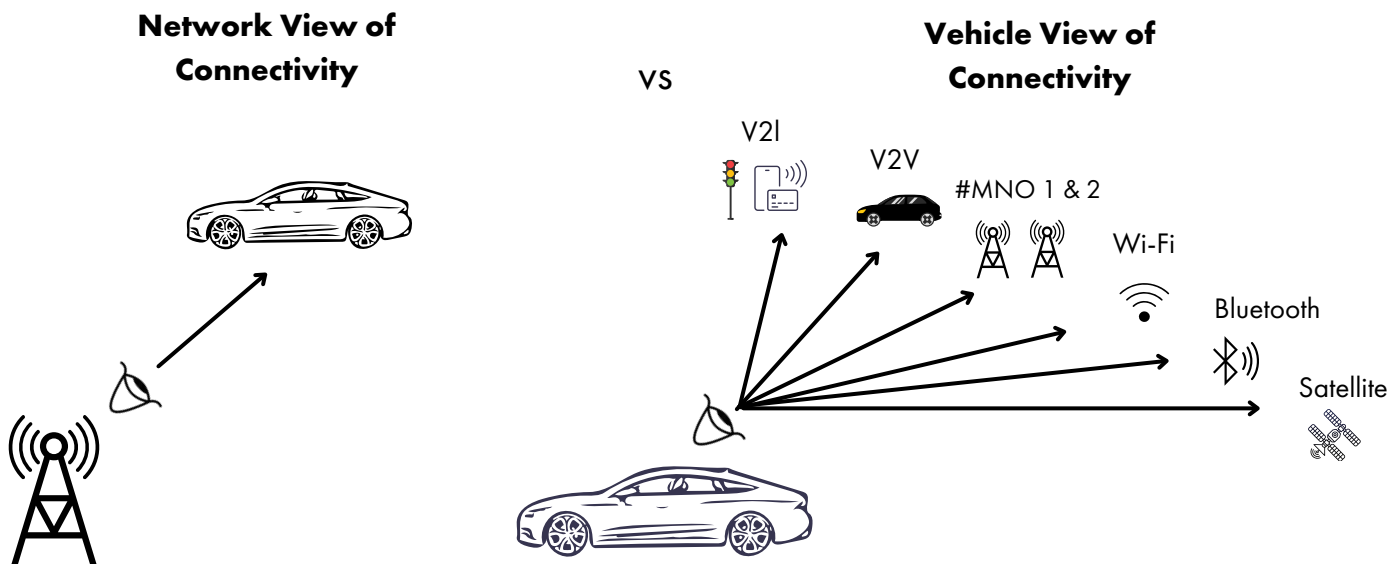
Helping Automotive OEMs Take Control of In-Car Connected Services

Improve Quality — Reduce Cost — Drive Revenue

nSpireAuto plays to the strengths of OEMs by providing a unique vehicle view of connected services. Typically a blind spot with a network only view, these granular insights turn the car into the hub for new business models, and not just another spoke for CSPs looking to expand their digital market share.

Global tech start-ups and CSPs are all staking a claim on in-car communications, creating revenue streams from vehicles that were once the exclusive domain of the automotive OEMs.

nSpireAuto restores the balance, providing control and visibility of the vehicle connected services and the customer experience, putting OEMs in pole position to monetise data and develop new business models that are emerging around in-car infotainment apps and Over-The-Air services.



Challenges

- Silos for each specific connectivity technology (e.g. Cellular)
- MNO data dumps are difficult to manage (and include non-vehicle data)
- Tied to your current connectivity provider
- Each provider will have a different data set (disjointed datasets)
- Does not represent the vehicle's true connectivity experience

Opportunities

- More Accurate
- All connectivity technologies
- A global unified view
- Existing and New Vehicles
- Independent of Connectivity provider

Three big wins for OEMs

1. Fine-tune and Optimise Connectivity

All vehicle connected services rely on the connectivity to the outside world. As assisted driving and software-defined vehicles proliferate, the car industry will become less about engineering and more about software services that depend on connectivity. nSpireAuto provides the vehicle view of the network through a single pane of glass.

Use Cases

1. Compare and contrast MNOs in different countries by speed, latency, coverage, capacity, and resilience, and use the data to switch networks to the best carrier.

2. Analyse cellular and Wi-Fi performance of connectivity components like TCUs and antenna to inform procurement decisions.

3. Use network performance analysis to ensure SOTA/FOTA execution is always optimised and successfully completed.

2. Understand Infotainment Application Usage and Experience

Solutions like Android Automotive and Google Automotive Services simplify the way apps are consumed inside the car but limit the role of OEMs who don't have control over the data. nSpireAuto's vehicle view is a way to take back control, providing visibility into application usage, capturing how time is spent, frequency of use, data consumed as well as regional and vehicle variations.

Use Cases

1. Analyse data usage by app, service and features across different regions to make more informed decision about what to bundle and who to partner.

2. Collate data from different makes and models to build more detailed customer personas that will help target cars at different demographics.

3. Improve app services by collating app usage with connectivity performance data to isolate technical issues by car, service or network.

3. Enhance Customer Experience

In-car infotainment services have to compete with people who bring their smartphones and an established digital lifestyle into the car. The way to win is by delivering a better experience, one that is unique to the vehicle. With its vehicle view, nSpireAuto offers a way for OEMs – and fleet management companies – to own the experience and strengthen customer relationships.

Use Cases

1. By tracking quality of service – for in-car WiFi as well as cellular services – OEMs can become more proactive and troubleshoot issues before they impact the customer.

2. With granular data on how customers interact with apps, services and in-car features, OEMs will be better able to tailor service bundles to different personas.

3. Visibility of customer behaviour provides valuable data that will inform strategic partnerships and revenue-generating opportunities.

How it Works

Collection → Enrichment → Analysis

Data Collection

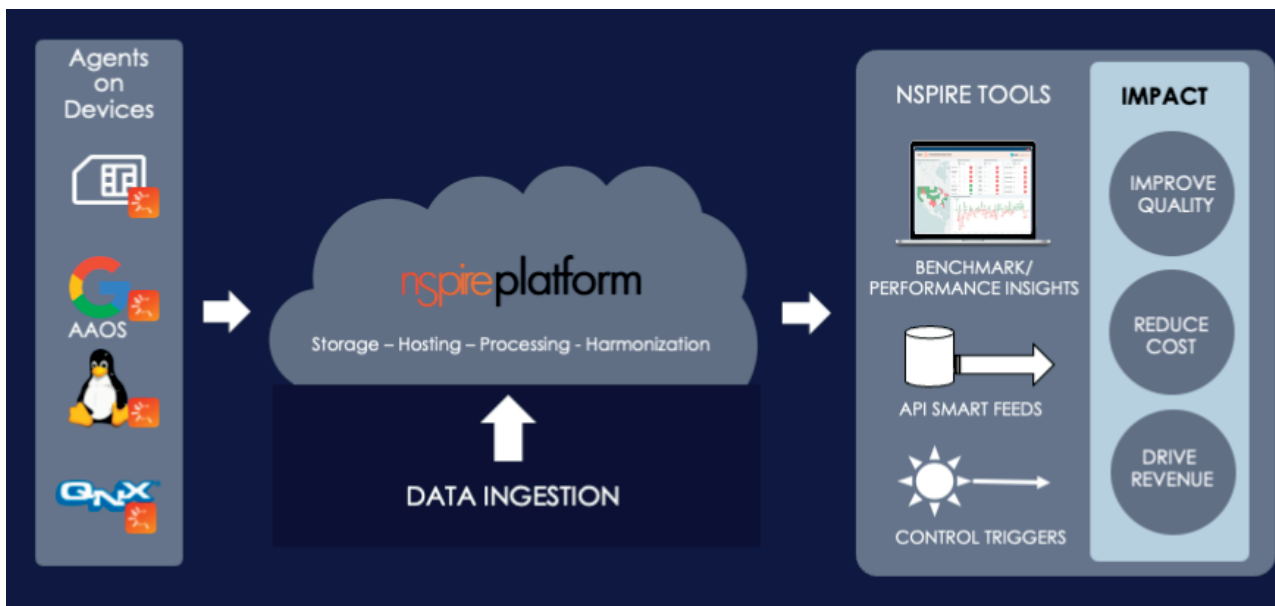
Patented technology in non-intrusive software agents that are installed in vehicles over-the-air, or at the point of manufacture/distribution. Compatible with any communication technology, from 2G through 5G SA, Wi-Fi, UWB, Bluetooth and satellite, these agents can be installed on SIMs/eSIMs, TCUs and automotive OS platforms, including AAOS, QNX and Linux-based systems.

Cloud-Native Processing

The passively collected connected services data is transmitted securely from each agent to the nSpire cloud platform where it is stored and processed for analysis and action. Open architecture and flexible APIs mean that different data sources can be integrated and harmonised to broaden the use cases. It's a secure and scalable solution, designed for simple and fast deployment into millions of vehicles.

Dashboard Metrics Analysis

OEMs have a dedicated portal with interactive dashboards where they can turn data into actionable insights. Productised dashboards can be aligned with network service priorities through a single pane of glass, whether connectivity performance, customer experience or troubleshooting. Automated alerts/alarms, patented algorithms and analytics can be tailored for the different use cases.

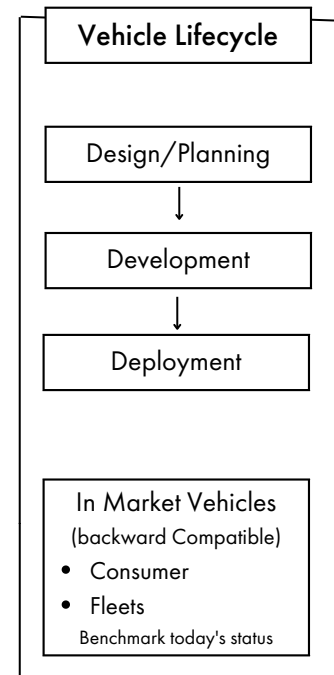


Business Value Benefits

nSpireAuto is a platform providing business value benefits throughout the vehicle's lifecycle. A sample of the nSpire features are listed below, all of which are categorised according to reducing cost, driving revenue and improving quality for the OEM.

Example Features

Feature	Reduce Cost	Drive Revenue	Improve Quality
WiFi vs Cellular - Intelligent Switching	●		●
Reduce Warranty Costs	●		
Infotainment experience and usage		●	
App Classification/Control	●	●	
SOTA/FOTA Planning	●		●
Carrier Choice (QoS NW Switching)			●
Vehicle Connectivity Testing & Optimisation	●		●
Coverage Heatmaps			●
Cell Handover Performance/Drop Calls			●
Fleet Mgmt. VAS		●	●
Root Cause Analysis – Error Codes	●		●
End to End Visibility – Companion App and Cloud			●



nSpireAuto Dashboard

