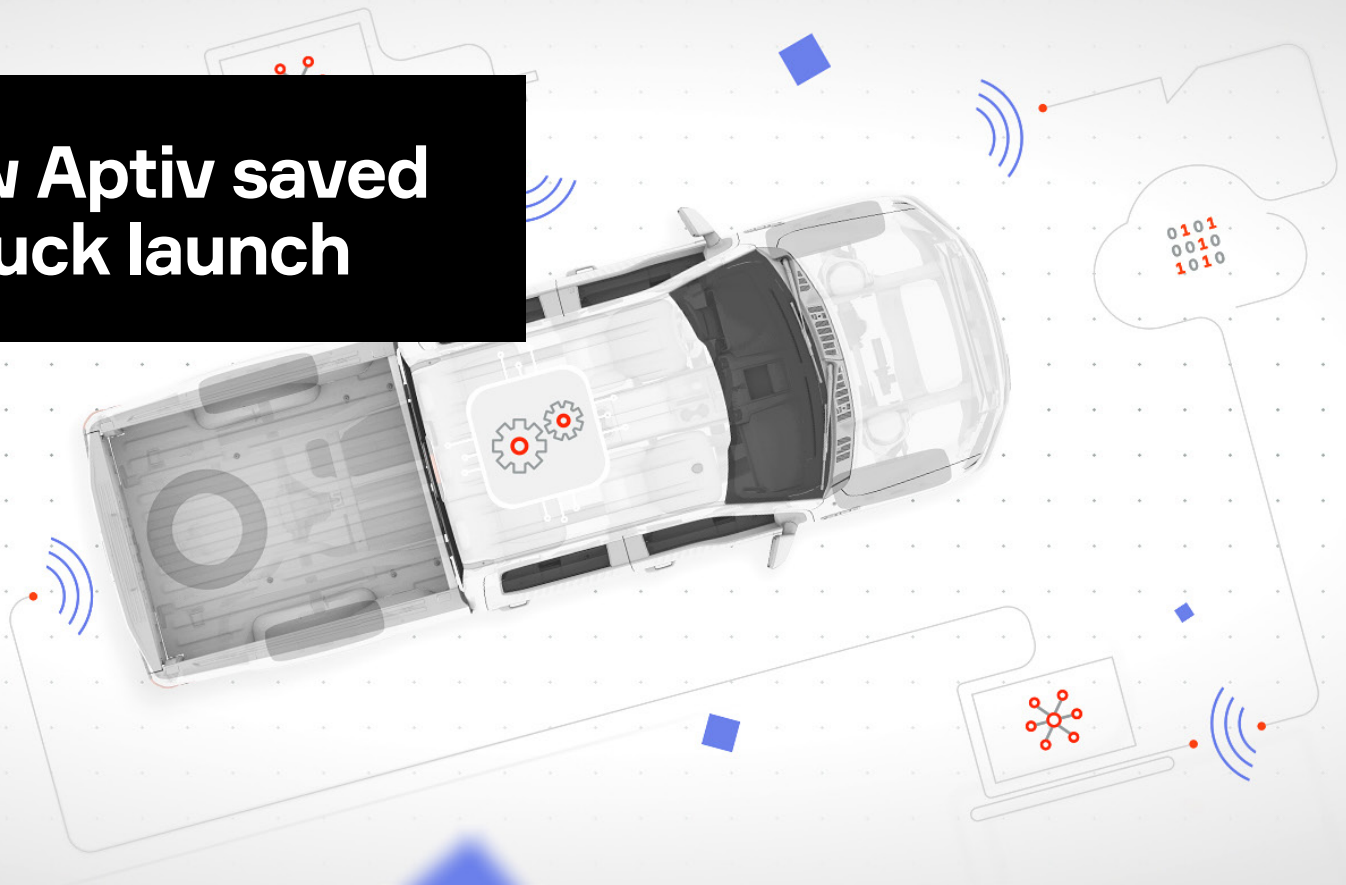# How Aptiv saved a truck launch

A LEADING OEM SAVED $50 MILLION USING APTIV'S SOLUTION TO FIND A VEHICLE MISFIRE DAYS BEFORE A MAJOR VEHICLE LAUNCH.

For any automotive manufacturer, a new vehicle launch is a tremendously important event that requires years of planning. And in the US, launching a new full-size truck — the flagship for the entire brand — is a make-or-break event.

If an OEM launches a new truck that has quality issues, sales will likely decline over the life of the vehicle model, and the brand could experience damage that lasts for decades. In addition, the company will need to recall and repair any affected vehicles. In the 2017 model year alone, manufacturers spent more than $48 billion on warranty costs and another $22 billion on recalls.

But automakers don't have a lot of time to find potential quality issues. They need to get their products to market fast to begin recouping their upfront costs for design, engineering, tooling, and manufacturing. They also invest millions advertising the big launch event. Delaying a launch by even a day can result in cost overruns and huge headaches for the manufacturer and dealers.

RESULTS AT A GLANCE

The new truck launched on schedule

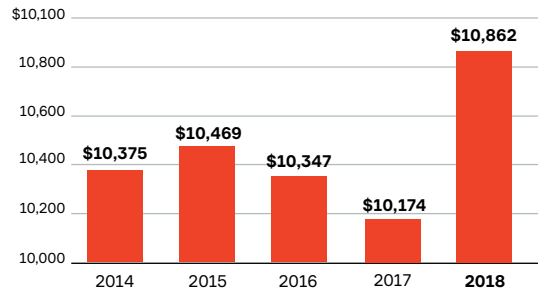The OEM saved an estimated $50 million in warranty fix costs

The manufacturer achieved a 20x ROI on its investment in the Aptiv solution

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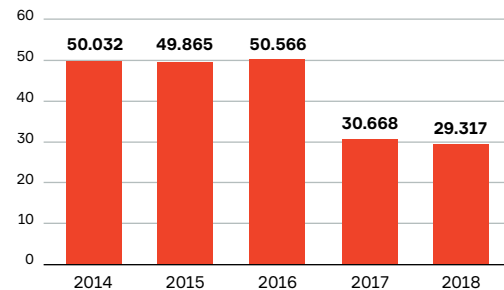
WARRANTY COSTS PER YEAR
North American Automakers

(in millions)

Year	Value
2014	$10,375
2015	$10,469
2016	$10,347
2017	$10,174
2018	$10,862

Source: Public financial filings

RECALLED VEHICLES — US MARKET
US Vehicles Affected by Recalls

(in millions)

Year	Value
2014	50.032
2015	49.865
2016	50.566
2017	30.668
2018	29.317

Source: National Highway Transportation Safety Administration (NHTSA)

Challenge

A major OEM came to Aptiv 10 months before the scheduled launch of a new full-size pickup. The company needed to find and fix any unknown problems before the vehicles hit dealer lots.

With prior methods for pre-production testing and validation, the company would only have known about any potential warranty problems if the issues were serious enough to trigger the check engine light or one of the other malfunction indicators. This process of identifying, analyzing, and fixing a single issue with these older solutions generally takes weeks if not months.

The OEM needed a faster way to get deeper vehicle insights and fix any hidden problems with the truck before launch.

Solution

To speed and improve their detection and analysis capabilities, the truck maker chose to deploy Aptiv Connect, an end-to-end vehicle quality application. To collect the data for that application, the company installed Aptiv Connect's edge computing hardware and software, Dynamic Edge, in 72 different test vehicles. These devices began the data analysis process right in the vehicles and transmitted the most valuable information to the cloud for further processing. The manufacturer's engineering team then used Aptiv's solution to access the vehicle data, create visualizations, generate reports, and set up alerts to notify them in real time of any problems with the vehicles.

With this strategy in place, the OEM was able to monitor the truck subsystems at sample rates about fifty times higher than traditional telematics. The edge computing

"We consider the service Aptiv Connected Services provides an integral part of our engineering process. As long-time partners, we have an extensive relationship with Aptiv and jointly adapt as technology changes. They provide outstanding on-call/ on-demand support for urgent launches."

**OE Validation
& Calibration
Supervisor**

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capability enabled the distillation of critical data in real-time to expedite analysis and notification process for high-interest signals from the vehicle. The solution separated the signal from the noise, allowing the company's engineers to narrow their focus to a very small fraction of the total collected data, making it much easier to spot potential trouble.

Results

After the test vehicles had been driven more than 3.8 million miles and passed all the OEM's most stringent testing, Aptiv Connect detected that some of the test vehicles had begun experiencing misfires. The problem was not severe enough to trip the check engine light, but it could have resulted in a major recall and warranty repairs if the trucks had shipped without a fix in place.

Using the Aptiv solution, the engineers found the cause of the problem right away. They created a software fix and flashed the 2,000 vehicles that were ready to ship to dealers with an emergency calibration update — all before the launch deadline.

Conservative estimates place the potential warranty fix costs at $50 million. This one incident alone yielded a 20x return on investment (ROI) for the Aptiv solution.

ABOUT APTIV

Aptiv is a global technology leader, with more than 160,000 people across more than 125 manufacturing facilities and 15 major technical centers worldwide. With a presence in 44 countries, we address mobility's toughest challenges through our deep software and systems integration expertise, delivering market-relevant solutions for our customers.

Aptiv brings unparalleled capabilities in solving our customers' complex challenges. We are unique in that we can integrate whole systems through Smart Vehicle Architecture™ — operating as the brain and nervous system of the vehicle — enabling electrification, active safety, and connectivity.

Our mission is to make the world safer, greener and more connected than ever before. As these trends converge and the world of mobility changes, we will lead this change.

Mobility has the power to change the world, and we have the power to change mobility.

BY THE NUMBERS

Savings
$50M

↓

Return on investment
20x

↓

Test vehicles
72

↓

Project timeline
10 months

↓

Miles driven
3.85M

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