

Transforming manufacturing quality: increasing first pass yield by 50% and reducing defects per unit by 30%



A leading manufacturer of specialty vehicles and equipment was awarded one of the largest vehicle manufacturing contracts to date.

With a contract of this size, the manufacturer knew that they not only had to deliver vehicles on time but ensure they met the highest quality standards. As production ramped, the team faced growing quality challenges that impacted both throughput and their ability to meet customer commitments.

The Challenge

Output at the plant was running significantly behind target. The team was producing roughly half the amount of vehicles per day versus their contractual target. And there were serious quality concerns. Each vehicle averaged more than a dozen defects, resulting in over several hours of rework per vehicle. Making matters worse, nearly every vehicle had at least one warranty claim filed against it.

At this rate, it was going to take almost two and half years to reach their production targets.

Compounding the problem, the quality team spent a disproportionate amount of time on manual data processing. Each team member was spending 5 hours per week on manual reporting and analysis before performing root cause investigations.

Without a real-time unified view of their operations, the team lacked the ability to quickly surface which defects were having the greatest impact on the bottom line, correlate in-plant issues with in-field warranty claims, or track which corrective actions were actually working.

"I really like how the platform can review free form text and find ways to compile data with differing vocabulary into the same issue."

"In one tool we can use the AI capabilities to feed us trends and help steer our priorities without having to manually interpret data."

**- Senior Manager,
Aftermarket &
Warranty**

The Solution

The manufacturer deployed Viaduct's intelligence platform across both the plant and warranty teams. With its intuitive, easy-to-use interface, the team was up and running quickly without a heavy lift from IT.

Viaduct seamlessly integrated all of their data into a single view to provide real-time visibility of their operations and surface patterns and insights that had previously been painstakingly difficult to uncover.

This changed how the team works. Instead of spending their days on manual, reactive work, they have redirected their efforts to higher value priorities: improving vehicle quality, reducing defects, and increasing production throughput.

The capabilities within the Viaduct platform that changed the way the team operates include the following:



Smart Groups

Automatically groups defects and warranty claims together so the team can detect emerging patterns and potential issues before escalation.



Quick View

Provides better visibility into correlation between claims and in-plant defects, enabling faster, more targeted corrective action.



Investigator

Identifies root cause, affected vehicle populations, and whether a corrective action is having the intended effect.



ViaDuck

AI Assistant trained on manufacturing data, assets, and lexicon, provides answers quickly about your operations.

"Viaduct Smart Groups and Related Defects has drastically lowered our warranty numbers.

If I can look at 5 items in a day versus 5 items in 5 days, I can get 5 teams working on it quicker."

- Quality manager

The Impact

Since deploying Viaduct's intelligence platform, the manufacturer has seen measurable improvements across quality and production metrics.

First Pass Yield (FPY) has increased by 50%. By helping the team identify and address defects earlier in the production process, vehicles are now passing quality checks on the first attempt at a substantially higher rate than before.

Defects per unit (DPU) are down by 30%. Fewer defects per vehicle means less rework and increased production of vehicles at the plant.

By helping the team identify and address defects with the greatest impact on First Pass Yield, rather than just the most frequent defects, vehicles are passing quality checks on the first attempt at a much higher rate.. These improvements will ensure they can meet their production targets and customer commitments.

Results at a glance:

50%

Increase in First Pass Yield

30%

Decrease in DPUs