quality**worx**

Even with quality systems in place, problems can happen. Due to a lack of specific and detailed data, manufacturers sometimes have to undertake expensive and public mass recalls when defects are found post-shipment. Manufacturers using QualityWorX, however, can limit the recall to only the affected units and respond quickly to minimize quarantine time.

First, QualityWorX helps to identify the cause of the defect by analyzing production data of the known affected parts, searching for subtle anomalies in the process signature that indicate the fault. Then it pinpoints the specific parts affected through advanced test modelling that compares data for all the potential affected parts to the known problem. The following examples demonstrate how it works.

EXAMPLE
Pinpoint Recall

An engine oil problem was discovered in a customer vehicle and the car manufacturer faced a potential mass recall of 10,000 vehicles.


The problem was diagnosed as an undrilled hole in the engine block. Using QualityWorX "What if" analysis, the engineer developed an algorithm to identify the defect and ran it against stored signature data. This analysis identified *7 defective engines out of 10,000*.

The manufacturer was able to conduct a limited recall by serial number on just the 7 affected vehicles. The new algorithm was then introduced on the production in-process tests to prevent reoccurrence of the issue.
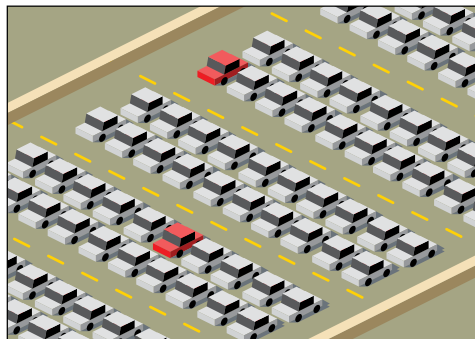
Process signatures are data-rich and provide the best insight into a process.

Only QualityWorX enables both the storage and analysis of complete process signatures.
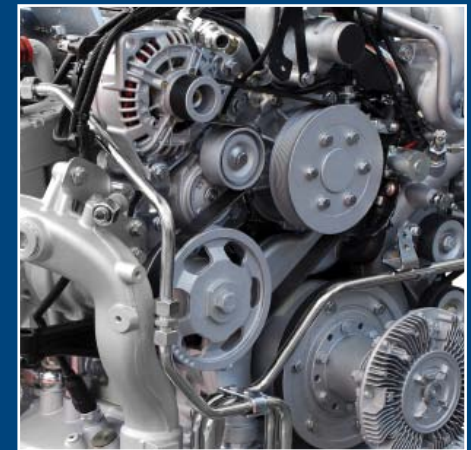
the science of quality

How to Reduce the Impact of Quality Spills

CASE STUDY

Reducing Quarantine

Engine failures at final test caused multiple plants which supplied sub-assemblies for the engines to cease production until the root cause was identified and addressed.

Tear down of a failed engine revealed that it was due to a head machining defect. The head machining plant used QualityWorX trending to identify the process signature that represented the defect, resulting in the identification of all suspect head serial numbers. These were then traced to the engines affected by the defective parts.
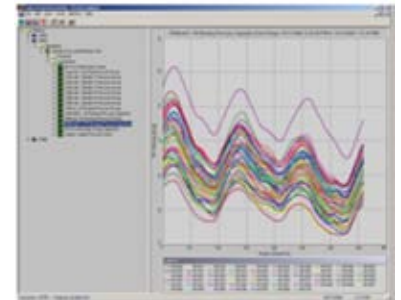
With the problem identified and fixed, vehicle assembly resumed production within hours and the quarantine was reduced by 75%.

CASE STUDY

Spill Prevention

Incorrect piston rings were used to build engines.

QualityWorX was used to review several known defective engines. The signatures for these engines exhibited a unique signature characteristic. The stored signatures for the entire batch were then retested using QualityWorX to find the remaining affected engines.

The repair costs were reduced by capturing the problem units before they made it to vehicle assembly. In total, 800 engines were identified and quarantined.

Although the examples used in this document are automotive, QualityWorX is used by a range of industries. Contact Sciemetric for more information.

TALK TO SCIEMETRIC ABOUT HOW QUALITYWORX CAN HELP YOUR APPLICATION

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