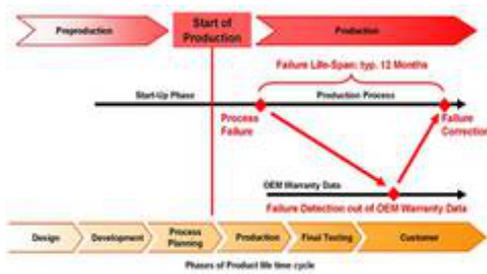


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Automotive Wisdom: Prevention is Better than Recall

The pace of technical advance and increasingly sophisticated driver expectations has demanded cutting-edge engineering solutions from the automotive industry. The pressures for time and cost acting in combination on the more complex technology mean greater risks of failure. When components that affect safety are affected, and the company resorts to a recall campaign, it not only translates to higher costs, it can also damage the reputation of the manufacturer and have a negative impact on future sales.



The automotive industry and warranty

In recent years the numbers of recalls in the automotive industry have increased almost continuously, apart from a short period during the economic crisis of 2009-2010. Warranty Week magazine reported that warranty costs for the automotive industry based in USA nearly reached 12 billion US dollars in 2010. Automotive warranties are estimated at around 40 billion US dollars worldwide each year, equivalent to a share of OEM sales of between 3 and 5%.

Probable recall causes

The two most frequent causes given for manufacturing errors of this kind are first poor communications between OEMs and their subcontractors and second a deficiency in technical interface definitions. These result in the use of incompatible materials or chemicals and technical side-effects arise with the hardware and software. Modern hi-tech vehicles contain ever-growing numbers of **electronic components** and this leads to more complex challenges, especially near to the engine where high temperatures combine with mechanical and chemical loading. Market pressures do exert a downward demand on costs and shorter times to market, but the danger is this can result in degraded product quality. In addition, while producing identical components for several applications makes economies of scale by lowering development costs, it also risks an identical failure in multiple products. The technical expertise on hand in a company is reduced by the outsourcing of qualified employees, which also results in a lack of qualified overview on processes and techniques.

More stringent safety laws are continuously being introduced and this abets faster recalls. Furthermore, claims from car owners and lawyers from all around the world are now accelerated by the internet and the deepening integration of international treaties and courts.

Typical of failures in the automotive industry

Weak points are only identified at the later stages from failures mainly introduced during the production phase in a product life cycle. So with **failure detection** lagging production by up to 12 months, many products with the same failure require recall and it results in high costs. It is important to detect failures much earlier to prevent such a scenario. This calls for support in the research and development phases.

Getting the best support

SGS has 20 years of experience in failure analysis and uses a three stage model for the support of automotive customers in preventing a recall scenario. SGS first carries out a failure mode and effects analysis (FMEA) on the technological processes, materials and products and discuss the theoretically potential weak points in a component.

Next SGS discusses the FMEA risk report with the customer as a qualification procedure of the automotive part. To identify the true operational limits, innovative alternatives can be incorporated to the traditional approaches used in quality assurance, such as robust validation. Finally, using various modern analytical techniques in failure analysis, a detailed evaluation of the component and its essentials is carried out. This is performed on previously qualified parts as well as new production.

For further information on the support SGS provides the automotive industry, please contact:

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