CASE STUDY - Korea
Industry - Automotive
Problem - Frequent product failures during mass-production launch

1. SNAPSHOT

An automotive manufacturer ('the client') commissioned a global parts supplier to design and develop an electronic component for its luxury vehicles. The supplier delivered prototype versions of the component at various intervals to ensure that the product functioned correctly before mass-production began. The fully tested electronic components were shipped to the automotive manufacturer's warehouse along with the instructions on how to handle the product during the mass-production of the vehicle.

The client started production with small volumes in order to fine-tune the process and minimise the risk of failures occurring in vehicles released on the market. Such failures could potentially cause:

- lethal injuries (depending on the type of the failed component)
- production down-time (approx. cost to the manufacturer per vehicle: $100 if failure detected during assembly, $300 after assembly, and $1000 as a warranty repair after purchase)
- inconvenience to the end-customer
- law suits
- job losses
- damage to the brand
- reduced sales and profit

2. PROBLEM

Automotive manufacturer reported random component failures (20 – 50 a day) during mass-production trial runs, resulting in production down-time costing approx. $20,000 per day. The supplier was accused of delivering faulty components and instructed to review both their product design and manufacturing capabilities at a cost of approx. $50,000 to the supplier.

3. IDENTIFIED CAUSES

- The product handling instructions were fully ignored, and/or not passed on to the relevant staff at the automotive manufacturer's facilities. The unpacked components were handled inappropriately which resulted in damage by short-circuit.
- The supplier's lack of knowledge that the delivered components were handled inappropriately by the client's staff from the point of arrival to assembly in the vehicle.

4. SOLUTION

1. Agreement on both sides to allow one of the supplier's engineers to be present at the client's premises to inspect all stages of the manufacturing process from arrival of the component at the warehouse, to unpacking and assembly, to fitting in the vehicle and final testing in a fully assembled vehicle. Upon completion of the observation the supplier provided the client with a written report and recommendations to be implemented within an agreed timeframe.
2. Making the product handling information more visible in the critical engineering drawings and distributing them to all relevant client's departments.
3. Design of a new program known as 'Production Launch Management' for the supplier to educate the client's key staff from all relevant departments about the product and its handling. Key workers subsequently passed on this knowledge to the remaining staff.

5. OUTCOME

- Significant increase in client's critical knowledge of the product.
- Eliminating production down-time by exposing weaknesses in client's production processes.
- Savings of approx. $50,000 to the supplier.
- Savings of approx. $20,000 per day to the client.
- Improved cooperation and relationship between the client and supplier - with the supplier now viewed as a proactive partner adding value