

CASE STUDY - Germany

Industry - Automotive

Problem - Difficult customer (ever-changing demands) key to the business

1. SNAPSHOT

A leading automotive manufacturer ('the client') aims to produce a high quality but cost-effective product with minimal risk of potential faults occurring after the purchase of the vehicle by the customer, which could result in costly warranty repairs or lethal injuries. The client receives a prototype electro-mechanical components from its supplier for them to be integrated, tested, and verified in prototype vehicles to ensure correct operation and functionality before the commencement of mass-production of the vehicle.

The components delivered by the supplier have numerous software failures detected during the vehicle testing. The supplier is instructed to rectify the problem and deliver a fault-free product within 7 days (any further delays could potentially jeopardise the launch of the mass-production) and improve their engineering capability to increase product quality by detecting and correcting failures before delivering the product. Potential consequences to the supplier include: legal action for delay in delivery of a functional product beyond 7 days and delaying the launch of the mass-production (approx. \$10 million), loss of future business (approx. \$50 million over 5 years), and damage to the brand.

3. IDENTIFIED CAUSES

- Despite a detailed product specification which both sides signed off on, after reaching the 'design-freeze' phase of the project the client's design requirements continued to change, with the development and delivery of additional features requested within the original deadline.
- The supplier did not have an effective system in place for adequately managing engineering changes coming in during the product development phase. Old and new requirements were mixed up causing confusion as to which requirements were being developed, which were being tested, and which had already been delivered, and for which phase of the project.
- The limited, already overstretched resources (e.g. the budget for the project did not allow the supplier to hire extra staff for the additional work-load) made it impossible for the supplier to guarantee the quality of the product within the original deadline.

2. PROBLEM

4. SOLUTION

1. Meeting between senior management teams on both sides to assure the client of the full commitment to a timely delivery of a high quality product.
2. Securing additional R&D funds from the client for the development of new features which were outside the original project scope at the time of the acquisition.
3. Outsourcing some of the testing to a specialist software development company that provided additional highly qualified test engineers at short notice.
4. Setting up an outsourcing system for testing and verification of the software while the product was still being developed.
5. Reviewing and improvement of the product development processes, including input from the client, to better manage engineering changes during the development phase.
6. Adding an extra 20% to the R&D budget when preparing future quotes to cover the cost of possible customer changes.
7. Documenting the process as best practice (and sharing the learnings) for use in future projects across the business unit.

5. OUTCOME

- The client covered the extra cost of developing additional product features both for past and future changes that were outside the original project scope, saving the supplier \$100,000 and \$300,000, respectively.
- The supplier was able to correct subsequent failures and deliver the product within the requested time frame of 7 days with regular updates of tests in progress sent to the client.
- Improved TTM (Time to Market) allowed for meeting all delivery deadlines and launch the mass-production on time.
- In case of any future faults engineers will have ample time to correct the problems before the product is released (through the outsourced software testing system).
- Assignment of a unique number to each customer requirement easily traced through each phase of the product development cycle (design, development, testing and verification, release) ensured that the delivery met all customer requirements.
- Product quality remained uncompromised.
- Involving the client in the product improvement process resulted in an improved business relationship, teamwork, establishing trust and respect between the supplier and the client.
- Improved customer satisfaction led the supplier to securing new projects with the client.