

Case Example: Using Systems Engineering to Improve Quality

1. Situation

- Product development community responsible for brake systems for trucks and autos
- Late design changes incorporated without full understanding of impact on quality
- Extensive redesign at pre-launch to fix identified quality issues
- Extensive redesign post-launch to fix quality problems
- Launch cycle is long and launch costs extensive

3. Deliverables

- Diagnosed existing development process for quality assurance
- Identified use of systems engineering as method for “quality requirements capture and management”
- Reengineered product development process to include quality systems approach
- Introduced new system to key suppliers
- Validated approach on pilot project then introduced process across engineering organization

Discreet
Manufacturing
Industry

2. Key Issues

- Company seeking to reduce total product development cycle and cost
- Electronics content increasing and becoming part of all major subsystems
- Cost pressure would not allow addition of engineering resources upstream
- Managing changes with suppliers is difficult when changes comes late in the cycle
- Customer requirements shift throughout the development cycle putting pressure to ensure quality

4. Results

- Introduced new process within six months of initiating the reengineering activities
- Reduced the total number of engineering changes 15%
- Reduced quality issues at launch up to 50%
- Reduced launch cycle from 60 days to 20 days
- Reduced launch costs by 30%
- Suppliers able to provide 5-10% cost and quality improvement first year

“Conequity introduced to the concepts of systems engineering and modular design that transformed our approach of working with our supply base. By using ‘design to cost’ strategies, we realized significant reductions in design and product costs.”

VP Engineering, Global Brake Manufacturer