

Koenigsegg

Fast track design with CATIA PLM Express



Overview

■ Challenge

Koenigsegg needed to replace its mechanical design-based CAD software with an all-in-one PLM solution

■ Solution

The company chose CATIA PLM Express for design and BOM and data management

■ Benefits

Design quality has improved, modifications are painless and product information is accessible to more people than ever before



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Jon Gunner
Technical Director
Koenigsegg



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Building the ultimate dream car for over ten years

Koenigsegg is in constant search of the ultimate sports road vehicle. Developer and producer of high-end super cars, Koenigsegg produces about 20 cars per year and that number is rising as the demand for specialized versions of its cars increases. Based in Sweden, Koenigsegg exports to customers around the globe in areas such as the Far East, Central Europe, South Africa, Australia, Scandinavia, and the US.

Compared to large automotive manufacturers, Koenigsegg specializes in low-volume production. It uses exotic materials and employs artisan craftsmanship on each car. Koenigsegg's bill of materials (BOM) is performance-based, not cost-based.

"Whereas OEMs concentrate on making a profit from their cars," said Jon Gunner, technical director, Koenigsegg, "Koenigsegg focuses on making sure that every component in the car is the best and performs its job optimally. There are no compromises in component design, development or manufacturing.

Challenges inherent to a demanding clientele

Koenigsegg needs to be at the forefront of new technology, react quickly to its customers changing demands and tailor its vehicles to include one-of-a-kind features requested by its discriminating clientele. "We need to understand the demands of our customers and to quickly react to these demands by implementing ultra fast launch development programs," said Gunner. "Even though we have few competitors who, for the most part, have more money than we do to invest in R&D, we nevertheless need to stay ahead by being cleverer and faster when a customer shows an interest in purchasing one of our tailor-made vehicles," he added.

Koenigsegg begins a new design by tailoring its homologated CCX car model to meet the needs of its customers. "We have a rapid development process that enables us to launch a product very quickly after concept," said Jon Gunner. Koenigsegg does all the styling, design, development, testing, and mechanical analysis work in house. The only activities it outsources are composite crash analyses, full vehicle crash



analyses, fluid dynamics, some aerodynamic work and the production of major composite components. "When we moved to the CCX model, we made a strategic decision to be a car producer and not a components manufacturer. This is why we outsource the major portion of our composites work to our suppliers and focus, in house, on assembling the car," said Gunner.

From many solutions to one

Koenigsegg previously used several different solutions for the development of its cars. It used a SolidX CAD system for design, a business software application for BOM management, purchasing, and manufacturing support, management, purchasing and manufacturing support and several other systems, which basically did not "talk" to each other. "We decided to move to CATIA PLM Express so that we could have better control over our products' life cycle," said Gunner. "From a design point of view, we opted for CATIA when we made the decision that the CCX would be developed 100% in 3D CAD. This meant that all of the exterior surfaces, body work and chassis would be derived from class A surfaces, and all the tools and masters machined directly from the CAD model. Our previous CAD system was just not capable of doing this."

Improved design quality, faster modifications, data access

Since designers started using CATIA, design quality has dramatically increased. Customer participation in fine tuning a design also

became possible thanks to real-time rendering and digital simulation. Designers are now able to show their work in progress virtually to customers who can indicate directly on the model where and what type of modifications they would like to make. "It's very impressive when we show our customers our engineering facilities and the state-of-the-art design solution we are using. It gives them a feeling of confidence that we are not cutting corners," said Gunner.

"My engineers are very happy with CATIA PLM Express; they find it easy to use especially when dealing with complex design situations. This has increased their motivation and that's a good thing since they accomplish more now than with our previous solution," added Gunner. "To tell you the truth, we could not have developed the CCX car or any of its derivatives without CATIA PLM Express."

Data and BOM management with ENOVIA SmarTeam

Koenigsegg's objective for the future is to have full control over its CAD-based data and fully integrate it into the company's ERP system. Jon Gunner would also like to move the BOM management from the ERP system to a design-based BOM management system like ENOVIA SmarTeam.

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