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Koenigsegg Drives in the Fast Lane

In constant search of the ultimate sports road vehicle for over 10 years, Koenigsegg develops and produces among the most exclusive super cars in the world, combining quality excellence and high level performance. The reason of their success: a tremendous control of all steps of the design and production process thanks to CATIA PLM Express.

Koenigsegg produces about 20 cars per year and that number is rising as the demand for specialized versions of its cars increases, exporting 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 is performance-based, not cost-based. Whereas large OEMs concentrate on making a profit from their cars, Koenigsegg focuses on making sure that every component in the car is the best and does its job to the ultimate. There are no compromises in component design, development or manufacturing.

CHALLENGES INHERENT TO A DEMANDING CLIENTELE

Koenigsegg needed 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 wealthy 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 Jon Gunner, Technical Director, Koenigsegg. "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,

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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, Monitor business systems for bill of materials 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."

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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 Smart Team.

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More about Koenigsegg

Founded in 1993, Koenigsegg is a Swedish manufacturer of exclusive high-performance cars in low series, exporting to 21 countries around the world. Koenigsegg is headquartered in Valhal Park outside of Angstrom, in the south of Sweden, in a large Fighter Jet facility, which employs 45 full time staff plus several extras. In 2000 Koenigsegg started the series-production of the CC 85 model and introduced in 2006 the CCX, a new model created to meet worldwide regulations for road use. In 2008, the CCX broke a new world record as the car attained 0-300 km/h in just 29 seconds.
www.koenigsegg.com

More about Semcon

Semcon is a global technology development company with business on 40 sites through three continents. The Group is active in product development and technical information and is organised into three business areas: Automotive R&D, Design & Development and Informatics. Semcon is a Dassault Systèmes PLM education partner and PLM reseller with special knowledge in CAD methodology and PDM implementations. Semcon delivers all services, trainings, and software within the PLM area. The Group has around 3,300 employees and annual sales of around SEK 3.3 billion in 2008.
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