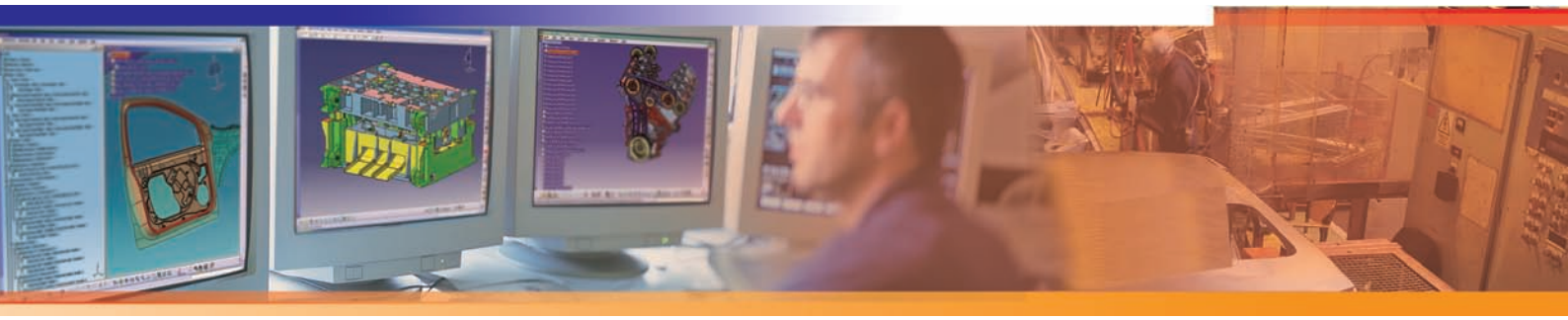
COC Corporation

Optimizing its mold tooling process with CATIA



Overview

Challenge

COC needs to satisfy the increasingly complex demands of automotive OEMs

Solution

COC chose CATIA for its sophisticated mold and tooling design-to-manufacturing needs

Benefits

With CATIA shape design, simulation and knowledgeware features, COC has significantly reduced design time and enhanced design quality

> "We strongly believe that CATIA will earn us a place in the international market and transform the company into a major sheet metal molding supplier for the automotive industry."
>
> Tseng Yuan-Kun , General Manager, COC

Major automotive supplier

Founded in 1990, COC Corporation is a subsidiary of the YULON Group and one of the largest automotive sheet metal parts suppliers in Taiwan. COC manufactures professional molds and press-molds and is one of the few suppliers capable of covering the entire manufacturing process. The company has 420 employees and annual revenue of 2 billion NT dollars (US$62 million). COC exports its products to more than 20 automotive manufacturers in 11 countries and was attributed, during an evaluation of suppliers worldwide, the 2003 Ford Golden Quality Award for quality control.

3D design platform replaces 2D design tools

As the design and functions of automobiles become more complex, so too do the requests from automotive OEMs to their suppliers. Currently, most major automotive manufacturers around the world have adopted CATIA as their 3D design-to-manufacturing platform.

2D-based design, which was widely used in Taiwan in the past, no longer satisfies the needs of today's technologically advanced products. Whereas globalization is a challenge COC must confront, it is also an opportunity for it to refine its expertise and sharpen its competitive edge.

Local supplier with global recognition

In 2005, COC started with two seats of CATIA: Advanced Hybrid Design and CAD/CAM Preparation Machinist 2. In 2007, COC extended its use of 3D technology to mold tooling, jigs and fixtures design processes. CATIA's outstanding shape design and simulation capabilities facilitated COC's move from 2D to 3D. Today the company designs a complete die face, performs CAE forming simulation and 3D model building using CATIA thereby ensuring a production-ready design. The jigs and fixtures are processed in CATIA as well.

"In the past, mold design was essentially done in 2D and mold tooling relied solely on the engineering team's experience," says Tseng Yuan-Kun, general manager of COC. "However, globalization and many successful cases convinced COC to fully adopt 3D design and knowledgeware capabilities."

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CATIA is a valuable asset for mold tooling where COC uses it to automatically simulate mold operation, as well as the mold's weight and cost of production. "In the past, these figures could only be estimated based on the engineering staff's experience and most of the time there would be a gap between the estimates and the actual values. Since we started using CATIA, this data is automatically calculated and generated from the associative 3D design. Accuracy is greatly improved, which is a great help in the later stages of production and manufacturing. Designing the molds with CATIA also dramatically decreases the time spent on modifying mold designs," says Tseng Yuan-Kun.

Dassault Systèmes' professional support team secured the smooth implementation

One of the major challenges COC faced during PLM implementation was the necessity to make the shift from 2D to associative 3D design as smooth and as fast as possible for its users. Although COC management was fully aware of the advantage of streamlining the product design and manufacturing process, the company's busy design office and assembly line were always occupied with orders and could hardly spare resources for learning a new system and transitioning from 2D to 3D. Thanks to CATIA's Windows-based ready-to-use interface designed specifically for engineering product design and manufacturing, the solution was perfectly adapted to meet this challenge. "Almost all of the major international players in the industry have selected CATIA as their 3D design platform," says Tseng Yuan-Kun. "Many competitors from emerging markets did not want to carry the baggage of outdated technologies. Instead, they took a great leap forward by adopting 3D design or even 3D processing right from the beginning. Adopting 3D design technology is a forward-looking and progressive strategic decision for COC in its quest to gain international market share and to satisfy the needs of our customers. We strongly believe that CATIA will earn us a place in the international market and transform the company into a major sheet metal molding supplier for the automotive industry."

COC a formidable competitor in the global automotive supplier market

Beyond COC's initial objective to use CATIA as its design tool for mold tooling and R&D, the company plans to go even further and develop a library of standard parts as well as create the parameterization of a press-molding table and 3D molding tools. In this way, COC will be able to accumulate design experience and knowledge and save time during part, graphics and document searches. It also expects to enhance knowledge sharing and design reuse, as well as manage its IP. In the future, COC plans to develop a designated PDM system for mold tooling design in order to improve communication between the headquarters and the factory in China inaddition to strengthening production efficiency. The company will take full advantage of Dassault Systèmes' PLM solutions to sharpen its competitive edge.

> "COC was determined to fully adopt 3D design and knowledgeware capabilities in order to satisfy the design requirements the global automotive market imposes on suppliers."
>
> TsengYuan-Kun, General Manager, COC.

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