GEOMETRIC

CASE STUDY

CAMWorks® enables CP-Carrillo LLC to Optimize Programming and Business Processes

CASE HIGHLIGHTS

The Client

Company:	CP-Carrillo
Headquarters:	Irvine, California
Industry:	Motor-racing, vintage cars, motorcycle, marine and aerospace industries

The Objective

To develop an Enterprise Business process that linked the order taking system with the design and manufacturing processes.

The Solution

To use CAMWorks because of its integration withSolidWorks and customization capabilities.

The Benefits

- Doubled productivity
- Consistency in products
- Ease in delivery of repeat orders

CAMWorks®
A Geometric Product

The Client

CP-Carrillo develops, produces, services and markets high performance forged pistons and high performance connecting rods in the global niche markets of motor-racing, vintage cars, motorcycle, marine and aerospace industries. They supply high technology components to numerous racing circuits including: NASCAR, NHRA, American Le Mans, World Rally, Grand- Am, AMA SuperCross and FIM Speedway Grand Prix; they also have more than 500 choices of catalogue offerings on pistons/rods with customization options. CP-Carrillo uses SolidWorks for design and CAMWorks for manufacturing, maximizing in-house design and 5 axis machining capability. They focus on providing industry-leading products and performance while maintaining the highest level of customer service.

The Challenge

Three years ago CP-Carrillo was under a lot of pressure from its customers to supply complex parts with shorter lead times. Their order book was heavily back logged and customers were threatening to find a more flexible source. They took a critical look at their business processes and found that while their proprietary programming was capable of standard machining, the complexity of the market had advanced. This was forcing them to rely heavily on MasterCam to perform time consuming manual operations for custom features. Repeat orders with small changes were being completely reprogrammed in the old CAD/CAM system leading to possible misinterpretation while doubling the process time.

The Solution

CP-Carrillo develops, produces, services and markets high performance forged pistons in the global niche markets of motor-racing, vintage cars, motorcycle, marine and aerospace industries. CP Pistons has recently acquired Carrillo Industries, a world leader in high performance connecting rods. Together, they supply high technology components to numerous racing circuits including: NASCAR, NHRA, American Le Mans, World Rally, Grand-Am, AMA SuperCross and FIM Speedway Grand Prix; they also have more than 500 choices of catalogue offerings on pistons/rods with customization options. CP-Carrillo uses SolidWorks for design and CAMWorks for manufacturing, maximizing in-house design and 5 axis machining capability. They focus on providing industry-leading products and performance while maintaining the highest level of customer service.

Barry Calvert (CEO and President of CP-Carrillo) and Karl Ramm (Senior Technology Manager CP-Carrillo) wanted to develop an Enterprise Business process that linked the order taking system with the design and manufacturing processes. They wanted a system that would enable the sales staff to instruct the assembly line and machines on the assembly line to start the order. This would require CAM software integrated in their design software, with customization capabilities through Application Programming Interfaces (APIs) that could be linked to the ordering system.

CP-Carrillo chose CAMWorks from Geometric Technologies, Inc. with the following rationale:

1. CAMWorks could tightly integrate with the design process which used SolidWorks.
2. CAMWorks has an open API platform that also could be customized to work along with their order booking system.
3. CAMWorks had feature recognition technology which would be able to suggest cutter paths based on different piston geometry.
4. Knowledge database (TechDB), a feature in CAMWorks could help the client to reuse the data.

"CAMWorks was the only tool we found out there that could meet all our demands and their flexible approach on APIs really helped us move forward on this initiative to develop an Enterprise Business process that linked the order taking system with the design and manufacturing processes"

Karl Ramm
Senior Technology Manager and Project Developer

The Benefits

Today, CP-Carrillo has a master model for designing and manufacturing pistons. They have template libraries and family tables for various types of pistons and have categorized them by manufacturing processes. When an order is entered into the Order Booking Software (essentially an Access database), the output from the ordering system goes to SolidWorks whereby the new piston CAD model is generated with the help of design tables and APIs Then, CAMWorks, gathers inputs from the order system and from SolidWorks and generates machine code which is ultimately sent directly to the CNC machines.

CP-Carrillo has now doubled the productivity while ensuring consistency with a small investment in CAM software. A repeat order, even after a few years, will be machined exactly the same way it was the first time the order was processed, using the new integrated system. Now, the next leap is taking automation to a level where a sales team member can directly instruct a job to run on the machines using the order booking system without any intervention from designers and programmers. Clients, perceptive of Geometric's capability in building custom software applications and integrating them with CAD and CAM software, entrust Geometric with their technology challenges.

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About Geometric

Geometric is a specialist in the domain of engineering solutions, services and technologies. Its portfolio of Global Engineering services and Digital Technology solutions for Product Lifecycle Management (PLM) enables companies to formulate, implement, and execute global engineering and manufacturing strategies aimed at achieving greater efficiencies in the product realization lifecycle.Headquartered in Mumbai, India, Geometric was incorporated in 1994 and is listed on the Bombay and National Stock Exchanges. The company recorded consolidated revenues of Rupees 5.11 billion (US Dollars 108.1 million) for the year ended March 2010. It employs over 3600 people across 10 global delivery locations in the US, Romania, India, and China. Geometric was assessed as CMMI 1.1 Level 5 for its software services and is ISO 9001:2008 certified for engineering operations.

Geometric's Desktop Products and Technologies (DPT) business unit develops cutting-edge point productivity solutions that enhance design and improve manufacturing operations. The end-user products from Geometric include CAMWorks®, eDrawings® Publisher, DFMPro, GeomCaliper® and 3DPaintBrush™. The key technologies from Geometric are NestLib®, Feature Recognition (FR), GeomDiff and 3DSearchIT®. Geometric licenses these technologies to OEM partners and also designs and implements customized process solutions using these technologies for industrial customers.

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