

## Using 3D to improve customer satisfaction

RASCO Automotive Systems leverages Solid Edge and NX to deliver customized products

### Business challenges

Delivering customized products for each client order

Facing new competitors who deliver products at highly aggressive prices

Need for faster product design/development processes

### Keys to success

Ability to design complex 3D parts easily and in less time

Accurate designs needed for delivering high quality products

### Results

Reduced design time by leveraging 3D to easily find and fix design problems

Eliminated design errors by delivering more accurate drawings

Improved decision making, which resulted in improved product quality

Improved customer satisfaction by delivering final 3D design output faster

## RASCO AUTOMOTIVE SYSTEMS PRIVATE LIMITED

### A pattern of sustained growth

RASCO Automotive Systems Private Limited was originally formed in 1953 as Radiator Supply Company. At that time, it functioned as a retailer of aftermarket copper-brass automotive application radiators. "RASCO has evolved into a full-scale supplier and exporter of copper-brass radiators, as well as one of India's leading automotive engineering design companies," says Aman Bir Singh, director, RASCO Automotive Systems. He explains, "The engineering services arm of the company was established in 2005. Over the next five years of business, we became one of the most trusted names in engineering design in the Delhi NCR region."

The company also was able to realize its growth by providing computer-enabled services for the automotive segment. To facilitate this expansion, RASCO diversified into the computer-aided design (CAD), computer-aided manufacturing (CAM), computer-aided engineering (CAE) and computer-aided styling (CAS) services business by collaborating with Siemens PLM Software. RASCO uses Siemens' Solid Edge® software and NX™ software (including I-deas™ software) for product development. In addition, RASCO serves as Siemens PLM Software's channel partner for the aforementioned design and manufacturing systems as well as for its Femap™ software – an advanced engineering simulation program that creates finite element analysis models of complex engineering products and systems, and displays solution results.

While RASCO's product offerings vary, most of its product development business comes from custom product orders. Its CAS services typically cover automotive accessories such as body kits, spoilers and such. Moreover, its product development process has to be extremely flexible since each customer order is often unique and requires a different design deliverable. RASCO also faces increasing time-to-market pressures as new competitors are continuously emerging and offering low rates for delivering similar products.

With these considerations in mind, RASCO decided to transform its product development process. The company focused on achieving more accurate designs in significantly shorter time frames.



# PLM Software

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## Solutions/Services

Solid Edge  
[www.siemens.com/solidedge](http://www.siemens.com/solidedge)  
NX  
[www.siemens.com/nx](http://www.siemens.com/nx)

## Client's primary business

RASCO Automotive Systems is an engineering service provider that offers automotive styling, machine design, reverse engineering and CAD/CAM services to the automotive and machinery industries.  
[www.rascoauto.com](http://www.rascoauto.com)

## Client location

Delhi  
India

## Partner



***"We chose Siemens' CAD solutions for a variety of reasons, including their ease of use, competitive pricing and excellent support. Each solution provides distinct price/performance values, so we use the one that we feel gives us the highest return on investment for particular applications."***

Aman Bir Singh  
Director  
RASCO Automotive Systems

## Moving to 3D design

The company had been using 2D design software to develop its products. However, with the need to deliver more complex parts and products faster and more efficiently, RASCO management knew it needed to implement 3D technology. To achieve this objective, the company adopted a two-pronged approach, leveraging Solid Edge and NX (and NX Ideas). Solid Edge is primarily used to remodel parametrically over solids generated from NX via white light scanning, and to model sheet metal components, assemblies and fasteners. NX is largely used to convert stereolithography (STL) scan data into non-uniform rational basis splines (NURBS) models and for mold and tooling applications.

"We chose Siemens' CAD solutions for a variety of reasons, including their ease of use, competitive pricing and excellent support," says Singh. "Each solution provides distinct price/performance values, so we use the one that we feel gives us the highest return on investment for particular applications. It's important to note that you can utilize data between Siemens' CAD systems and maintain associativity. This interoperability is invaluable as changes are automatically maintained between the various CAD models generated by our different design groups."

Singh explains, "Most of our work starts with reverse engineering – for example, an automotive water pump assembly, which has a housing, shaft, bearing, fasteners, etc. We first scan the housing and convert the data into an STL file, then generate cross sections at various positions of the STL file to get reference data as points or curves. We import this data via IGES (initial graphics exchange specification) into the NX technology and build 3D models using the reference data. Once we have the 3D models, we send them to Solid Edge using Siemens' Parasolid or as .prt files, as applicable."

The company uses Solid Edge to remodel the 3D data as parametric models. Singh continues, "Then we make smaller components like shafts and bearings in Solid Edge from drawings, measurements, etc. With all of the components prepared, we assemble them in Solid Edge using Solid Edge libraries to add fasteners. After completing the assembly in 3D using Solid Edge, we generate drafts for individual components and assemblies. In addition, we use Solid Edge extensively for sheet metal applications, such as generating blanks for bent sheet metal components. For tooling, we employ NX's surfacing and Boolean operations, which are excellent. Once extracted, we export the molds to Solid Edge for mold assembly and final checks, and then deliver them to our clients as IGES files. We use IGES because most of our clients have their own tool rooms and IGES is the format they typically prefer."

RASCO's investment in Siemens' technology has generated impressive results. The design process has significantly improved as the company's development teams are now able to produce far more accurate designs. Designers are able to more quickly identify and resolve problems, as well as to make better design decisions. This translates into higher quality products. In terms of speed, Singh notes the difference is dramatic, "Our design cycle is up to 50 percent faster."

Singh adds, "With Siemens' tools, our designers are now communicating far more effectively with each other, especially relative to design intent. And we are now communicating with our customers completely digitally. The whole product development process means not just faster and better, but ultimately, it means enhanced customer relationships and more business."



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