

TRANSPORTATION AND MOBILITY CASE STUDY
ENDURANCE TECHNOLOGIES PRIVATE LIMITED



Challenge:

Endurance Technologies Pvt. Ltd. needed to respond more quickly to its automotive OEM clients and to streamline collaboration across the organization.

Solution:

The company chose Dassault Systèmes' **3DEXPERIENCE®** platform, including its ENOVIA V6 application for data management and collaborative innovation.

Benefits:

With a unique platform for data and workflow management, Endurance Technologies transitioned to 100% digital and eliminated inefficient paper-based methods, improved collaboration and reduced lead times and manufacturing errors.

According to The Aluminum Association,¹ "aluminum has a 20% smaller life cycle CO2 footprint than steel and compared with today's steel cars, a fleet of aluminum vehicles saves the equivalent of 44 million tons of CO2 emissions." Indian Tier 1 automotive supplier, Endurance Technologies Pvt. Ltd, has bet on this material to drive its business.

"Global emission standards requiring OEMs to produce lighter vehicles have made Aluminum Die casting a fast-growing business," said Dr. Mohan Godse, Executive Vice President of New Product Development-Casting Division, Endurance Technologies Pvt.Ltd. "Aluminum Die cast products are found in all types of vehicles, from two wheelers, which include motorcycles and scooters, to three wheelers, which are very popular here in India and four wheel passenger cars and commercial vehicles."

Endurance Technologies excels in the manufacture of Aluminum Die cast products and, as such, offers very attractive solutions to OEMs around the world, many of which are already its customers. Aluminum, for example, is increasingly used for structural components. "Take the swing arm, for example, a main component of the rear suspension of a motorcycle and a part we manufactured for one of our global OEMs," he said. "This technology-driven product helps reduce motorcycle weight, while offering better riding comfort and handling. And because it takes up less space, the OEM has more room in which to focus on styling."

OEMs need to launch environmentally friendly yet high performing vehicles at a fast pace in response to a dynamic automotive industry. "Today's automotive consumers are very demanding because they desire diversity, fuel efficiency, strength and compliance with standards and all this for a low price," Dr. Godse said. "In India, for example, drivers want

comfortable yet affordable vehicles that are sturdy enough to withstand Indian road conditions. OEMs need to comply while accelerating their delivery of vehicles to market, and they depend on us to be responsive as well. It determines their success and ours too."

CUSTOMIZED SOLUTIONS

Endurance Technologies works in collaboration with its OEM customers to design the part that fits their needs. It relies on its four R&D centers, each one dedicated to a different product line, to come up with innovative products that will make a difference in the market. One such achievement is an inverted front fork that the company developed in collaboration with a European Tier 1 supplier. "The inverted fork increases rigidity and performance and was a first of its kind component in the Indian market," Dr. Godse said.

Dr. Godse believes that designing innovative automotive parts is a combination of product, process and manufacturing. "When all three exist in one single environment, the result is an efficient way to develop products that customers want," he said. "This is why we adopted Dassault Systèmes' **3DEXPERIENCE®** platform; it provides us with integrated applications on a unique platform from design to manufacturing, resulting in end-to-end digital continuity and data compatibility."

Secure collaboration was another important requirement since Endurance Technologies Pvt. Ltd. has sites across India with designers and engineers who need to exchange and work together on projects. "In the past, collaboration was manual and paper-based," Dr. Godse said. "Engineering BOM,



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— Dr. Mohan Godse
Executive Vice President of Endurance Technologies Pvt. Ltd.

¹The Aluminum Association www.aluminum.org/product-markets/automotive

RFQs, change management - all these processes existed, but information was exchanged on paper and there was no traceability.”

“Now, project teams throughout the organization can collaborate in real time on virtual 3D models and data that they can all access in a unique environment – the **3DEXPERIENCE** platform. With one single click, all our Advanced Product Quality Planning (APQP) data, all our deliverables, can be retrieved from any location and they are capitalized in the system for future employees,” said Mr. Nitin Bhone, Manager, Transmission R&D.

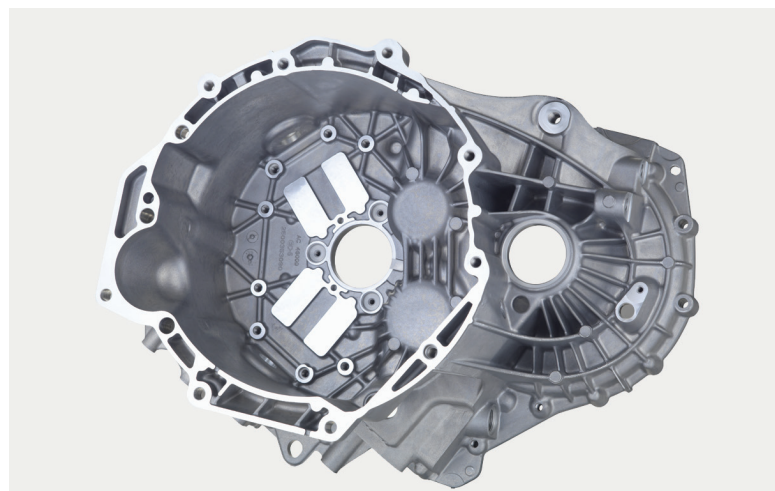
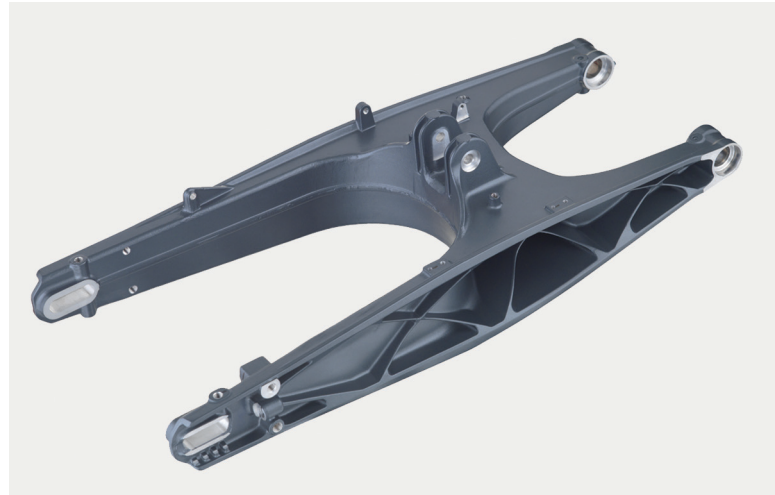
Dassault Systèmes business partner Xchanging implemented ENOVIA at Endurance. “It has been a great experience to work with the team at Xchanging,” Dr. Godse said. “They deployed ENOVIA from blueprinting the business process documents to extending ENOVIA to the shop floor. They added value to every stage of New Product Development (NPD) and helped us harmonize the engineering process across different business units on the single enterprise platform – the **3DEXPERIENCE** platform.”

WORKFLOW AND PROJECT MANAGEMENT

The design release process is managed by ENOVIA V6, the **3DEXPERIENCE** platform’s workflow management application. ENOVIA also manages the change process and informs project stakeholders which data is impacted by the change and whose work is affected. Project milestones are updated with ENOVIA’s product planning and program management solutions so everyone can see how the project is moving forward. Each casting, brake, suspension, and transmission division has a common APQP process and workflow standardized in the system, which ensures that each approval, validation and project phase is respected. “Lead times are reduced and design errors are less likely to occur,” Dr. Godse said.

“Moreover, all engineering data is linked to business information in our ERP system. There is connectivity and controls in a secure environment. Document management is incorporated into the ENOVIA environment, which is critical for a Tier 1 supplier. In this way, engineers don’t manage data, they focus on innovation and design,” Dr. Godse said.

The company went one step further and uses ENOVIA to manage its quality process TS16949. “The people involved in quality assurance have a central environment they can all work in to manage product quality and even share best practices. There is also a powerful search engine employees



Top image : Swing arm. Endurance Technologies excels in the manufacture of Aluminum Die cast products.

Bottom image: Clutch housing. Endurance Technologies suspensions, die cast products, brakes and transmissions are developed using a dedicated APQP process and workflow in the **3DEXPERIENCE** platform.

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