

## Automotive and transportation

# Shanghai Huizhong

Implementing Teamcenter to establish an enterprise-wide digital manufacturing platform and best practices

### Products

NX, Teamcenter

### Business challenges

Diversified products, low volumes

Short delivery time and frequent changes

Large organization, distributed production facilities

Flexible and efficient management of product data

### Keys to success

Advanced technology of Teamcenter for the automotive industry

Detailed, multiple-phase implementation roadmap

Continuous monitoring of project progress

Local service and outstanding implementation from Siemens PLM Software

### Results

Effective management of engineering data

Streamlined manufacturing process management

### Siemens PLM Software technology helps Shanghai Huizhong improve engineering data management and manufacturing process management

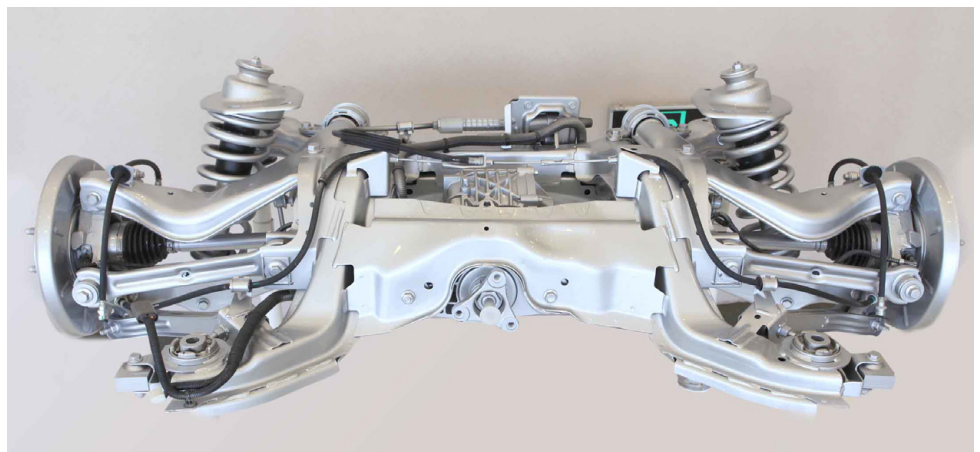
#### Chassis system specialist

Founded in 1992, Shanghai Huizhong Automotive Manufacturing Co., Ltd. (Shanghai Huizhong), a subsidiary of SAIC Motor, manufactures automotive chassis systems. The company operates one research and development (R&D) center, 12 production facilities and five joint ventures, and has been recognized as a “New and High-tech Enterprise” in Shanghai.

Shanghai Huizhong focuses on the production of chassis systems for passenger and

commercial vehicles. It has integrated capabilities for research, development and manufacturing (including stamping, welding, electrophoresis, metalworking, assembly, and heat treatment). Products include cars from A0 to C classes, as well as sport utility vehicles (SUVs) and multi-purpose vehicles (MPVs). The company serves cars produced by Shanghai Volkswagen, Shanghai General Motors and SAIC Motor.

Shanghai Huizhong was also the first Chinese manufacturer of car chassis systems in the North American original equipment manufacturer (OEM) market. The company was officially accepted by General Motors Corporation to be a supplier of auxiliary frames, rear axle structures and parts under its first global platform project, EPSILON II. The company's trademark “Huizhong” is recognized as a National Well-known



## Results (continued)

Integrated PLM platform across all business segments

Notably improved business development

Foundation in place to realize advanced PLM capabilities and benefits

The PLM project implementation at Shanghai Huizhong transformed the company's business processes and capabilities, delivering enterprise-wide standardization.

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## Powerful R&D driven by PLM

Shanghai Huizhong aims to form a complete production network for automakers. The business supports diverse deliverables, high volumes, short delivery times and frequently changing demands to satisfy the requirements of automakers. Shanghai Huizhong has an expansive organizational structure and distributed production facilities. Information systems play a critical role in this large-scale enterprise, coordinating various business segments, such as research, design, manufacturing, purchasing and finance. A powerful and capable product R&D system is the best solution to properly address its business requirements.

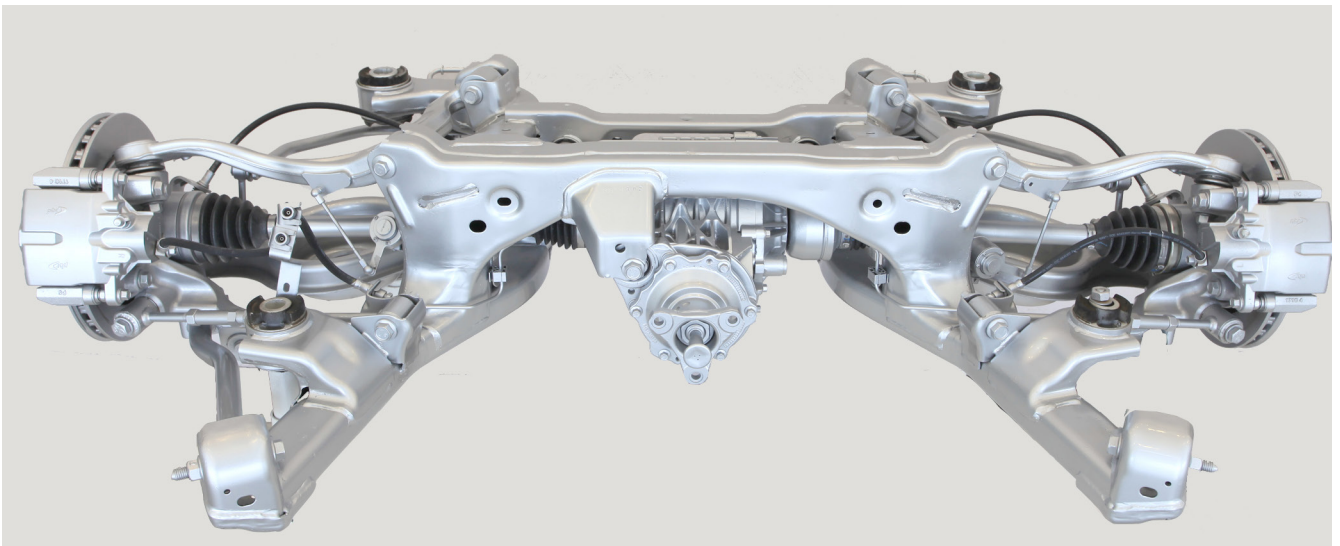
Shanghai Huizhong implemented NX™ software from product lifecycle management (PLM) specialist Siemens PLM Software as its product design tool in 1996. As the company's scale and product portfolio expanded, the product R&D team realized that it needed an information system to manage the growing complexity.

After a thorough assessment of PLM systems available in the market, Shanghai Huizhong chose Teamcenter® software, also from Siemens PLM Software, in 2009 to build its own product R&D system.

## Primary goals

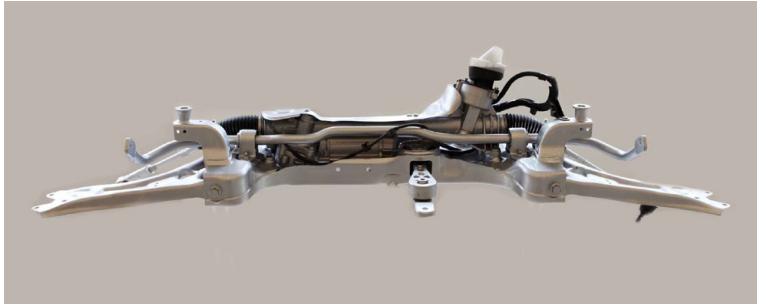
"By implementing PLM, we aimed to address several issues," explains Xiong Bin, PLM project leader at Shanghai Huizhong. "Firstly, we wanted to unify specifications, standards and management of distributed data. Secondly, we aimed to standardize various processes. Thirdly, we needed to enable information sharing and knowledge management among design, process and management personnel. Finally, we aimed to establish a comprehensive, independent R&D system."

Shanghai Huizhong's PLM project was divided into three phases. Phase I started in August 2009. The PLM system's product data management (PDM) capabilities were implemented in the research and design departments to manage historical data and digital drawings and to generate design bills of materials (BOMs). Part attributes, product



structure, design drawings and 3D mockups were included. The goal was to synchronize specifications, standards and management of distributed data across the company. PLM project Phase I officially went live as scheduled in January 2010.

Project Phase II started in September 2010, building on the Phase I achievements. It extended coverage of applications and constructed systems to manage research and design projects, simulation data, experimental data, and knowledge data libraries. A flexible system with comprehensive features was built for the product R&D department. And the end of Phase II in October 2011, the department could efficiently manage its product data, design BOMs and design changes, and integrate design BOMs with the SAP® software. Data from the company's NX and CATIA® software were also fully integrated.



The implementation of Teamcenter at Shanghai Huizhong addressed all product data and project management requirements of the product R&D department. The company then wanted to extend Teamcenter beyond PDM functions for complete PLM

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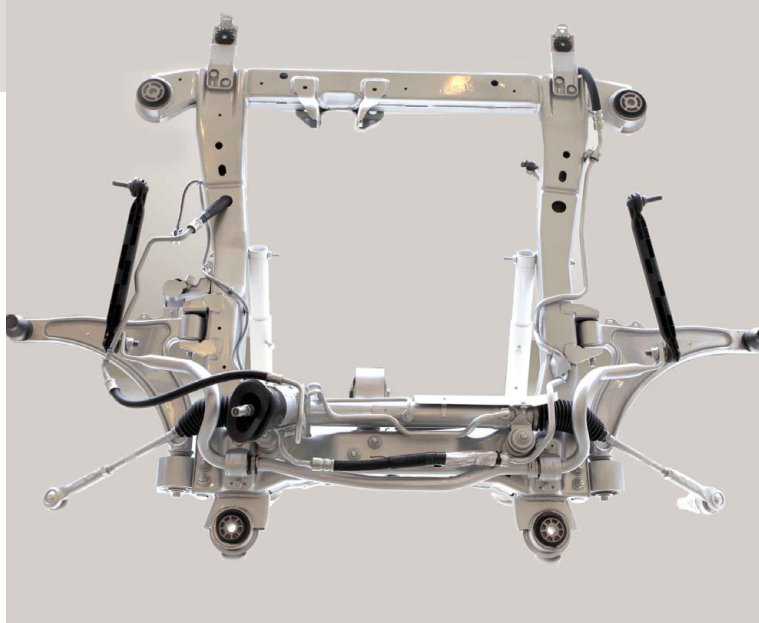
engagement. The company spent nine months on continuous improvements and enhancements based on Phase II results. This was to prepare the Phase III implementation, extending use to the process and manufacturing departments.

Shanghai Huizhong started planning PLM Project Phase III of process management in March 2013. The company had a clear goal to bring a PLM-based system for process management, to lay the foundation of an integrated digital design and manufacturing platform in the future.

Process management was critical for realizing seamless integration of the digital manufacturing system with the digital design system. Phase III focused on building a process management system to synchronize with its design management system, to concurrently model products and processes. In December 2013, Shanghai Huizhong's PLM Project Phase III, the process management module, went live, achieving the defined goals in the process department and manufacturing facilities.

#### **Integrated platform across business segments**

Shanghai Huizhong completed an integrated platform to cover extensive business segments. Market requirements are initially handled by the design department, with virtual prototyping and product visualization in the engineering BOM (EBOM) provided. The process BOM (PBOM) is generated automatically. The system simulates processes and performs capacity analysis. Trial production is performed using the process management system, with process specifications and files readily generated. Finalized PBOM files, mass production files and product engineering drawings are transferred to the manufacturing BOM (MBOM) and directly used in production by the enterprise resource planning (ERP) systems and manufacturing execution system (MES) technology across the company's manufacturing facilities. The company has realized a complete information and business process chain throughout its design, process and manufacturing operations.



“Shanghai Huizhong has successfully implemented two major Teamcenter solutions for engineering data management and manufacturing process management,” says Xiong Bin. “The implementation and promotion of this PLM project has brought our technological development and management to a new level.”

Since the Phase III implementation, Shanghai Huizhong has been promoting the digital manufacturing system across the enterprise. The company has the ambition and in-depth expertise to establish a complete digital manufacturing system in the future, with its PLM system roadmaps including additional applications, such as unified BOM management, virtual process verification and optimization, as well as productivity simulation.

#### **Enterprise-wide standardization, energized business development**

The PLM project implementation at Shanghai Huizhong transformed the company's business processes and capabilities. The company achieved enterprise-wide standardization. In addition to the features and capabilities provided by Teamcenter, key attributes enabling its success included clear targets and goals, the meticulous planning of the overall project and close monitoring of project progress. The implementation of NX and Teamcenter has significantly energized Shanghai Huizhong's business development.

#### Solutions/Services

NX

[www.siemens.com/nx](http://www.siemens.com/nx)

Teamcenter

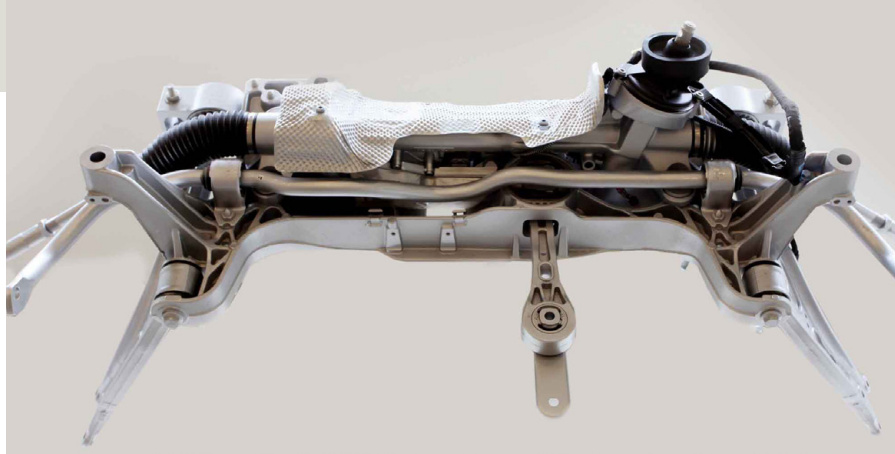
[www.siemens.com/teamcenter](http://www.siemens.com/teamcenter)

#### Customer's primary business

Shanghai Huizhong Automotive Manufacturing Co., Ltd. focuses on the production of chassis systems for passenger and commercial vehicles.  
[www.shac.com.cn](http://www.shac.com.cn)

#### Customer location

Shanghai  
China



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Xiong Bin  
PLM Project Leader  
Shanghai Huizhong

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[www.siemens.com/plm](http://www.siemens.com/plm)

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