

## Developing cars faster and selling them for less

Product lifecycle management solutions speed vehicle design and enable lower prices

MARUTI UDYOG LTD.



Siemens PLM Software

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

### ▶ Business challenges

- Ensure customer delight
- Increase shareholder value
- Reduce development time and offer cars at lower prices

### ▶ Keys to success

- Information management, process management and global collaboration supported by Teamcenter® software
- More efficient and innovative design and manufacturing with NX® software
- Ability to simulate manufacturing processes using Tecnomatix® software

### ▶ Results

- 25 percent reduction in design-to-launch time; additional 15 percent improvement yet to come
- Lower prices for five models
- 50 percent reductions in assembly/build issues and ECN time

### Working with pride in India

Maruti Udyog Ltd., a subsidiary of Suzuki Motor Corporation of Japan, has been the leading Indian passenger car maker for about two decades. The company has a diverse portfolio that includes: the Maruti 800; the Omni; a premium small car, Zen; the international brands, Alto and WagonR; an off-roader, Gypsy; the mid-size Esteem; a luxury car, Baleno; an MPV, Versa; a premium subcompact car, Swift; and a luxury SUV, Grand Vitara XL7. The company's 11 base platforms encompass 300 variants for 100 export destinations.

According to Maruti's vision statement, its goals include maintaining leadership in the Indian automobile industry, creating customer delight, increasing shareholder wealth and being "a pride of India." Customers have shown their approval, ranking Maruti high in customer satisfaction for six years in a row according to the J.D. Power Asia Pacific 2005 India Customer Satisfaction Index (CSI) Study. The company has also ranked highest in the India Sales Satisfaction Study.



### The need for PLM

Among the company's product development challenges, the need for shorter cycle times is always at the top. Management wants to be able to launch new models faster and reduce the time required for minor changes and development of product variants. Another challenge is co-development. Maruti's goal is to collaborate closely with its global teams and suppliers on the development of new platforms and product freshening. Other challenges include streamlining the process of vehicle localization and enhancing quality and reliability.

These challenges pointed directly to a product lifecycle management (PLM) solution with capabilities for information management, process management, knowledge capture and support for global collaboration; a PLM solution directly addressing Maruti's business challenges. For example, PLM's information management capabilities address the issue of the many platforms, local variants and export destinations. Process management permits concurrent development and faster change management and provides a platform for other process improvements for faster vehicle

**SIEMENS**

**Solutions/Services**

NX

Tecnomatix

Teamcenter

**Client's primary business**

Maruti Udyog Ltd., a subsidiary of Suzuki Motor Corporation of Japan, is India's leading maker of passenger cars.  
www.maruti.co.in

**Client location**

Gurgaon  
India

**Special recognition**

Grand Prize Winner of  
AP PLM Excellence Award 2006

***"Siemens leverages the business value by offering a complete PLM solution. The PLM system is the backbone of Maruti's product development process."***

C.V. Raman  
General Manager, Engineering  
Division  
Maruti Udyog Ltd.

***"The PLM solution has given us an optimum path for global, collaborative and concurrent engineering for long term gains to Maruti."***

I.V. Rao  
Chief General Manager  
Engineering  
Maruti Udyog Ltd.

development. Knowledge capture increases innovation and also reduces costs by increasing part re-use. PLM's collaboration capabilities permit global development by ensuring fast and accurate dissemination of product information.

**Implementation profile**

Maruti selected the Siemens PLM Software solution because "Siemens leverages the business value by offering a complete PLM solution," according to C.V. Raman, general manager, Engineering Division, Maruti Udyog Ltd. Maruti's PLM implementation includes Teamcenter, NX and Tecnomatix software.

Teamcenter provides a wide range of functionality for release management, including bills of material management and change management. Teamcenter also handles the vehicle localization process, coordinates the part approval process and integrates design and engineering information with the company's ERP system. In addition, Teamcenter provides the infrastructure for global collaboration. It does this by permitting real-time data sharing with suppliers in India and the global Suzuki team.

NX supports vehicle design by providing advanced tools for styling, product design and digital mockup. Its system-based modeling solution (WAVE) simplifies the creation of product variants. NX is also used for tool design and the development of machining programs.

Tecnomatix automates manufacturing process planning (final assembly and body-in-white) and allows for assembly feasibility studies, ergonomic analyses, welding cell simulations and so on.

**PLM delivers results**

Since implementing the Siemens PLM solution, engineering change notice (ECN) time at Maruti has decreased by 50 percent. The number of ECN errors has also been cut in half. Cost reduction, which had been occurring to some extent before the PLM implementation, is even more effective now, an improvement of 54 percent.

With 3D parametric models now representing all elements of a vehicle, design reviews include digital mockups, which people find much easier to understand than drawings. On a recent program, digital design reviews revealed 36 issues that previously would not have been detected until the prototype stage, resulting in program delays. With the Siemens PLM implementation, such delays are now avoided. Factory simulation functionality has had equally beneficial results. Digital 3D plant layouts reduce errors and have cut personnel costs for accommodating new product introductions. In addition, Maruti has seen a 50 percent reduction in assembly/build issues.

From the business perspective, all this means vehicles get to market sooner. The company has experienced a reduction in design-to-launch time of 25 percent, and expects a further reduction of 15 percent as more of the collaboration with Suzuki and suppliers is done electronically in real time. From the customers' perspective, the move to the Siemens PLM solution is seen in lower prices. Since the implementation of Teamcenter, NX and Tecnomatix, Maruti has reduced prices for five car models.

**Contact**

Siemens PLM Software

Americas 800 498 5351

Europe 44 (0) 1276 702000

Asia-Pacific 852 2230 3333

www.siemens.com/plm