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Ingenuity for life



**GEOMETRIC
SOLUTIONS**

Industrial machinery and heavy equipment

Foton Lovol

Heavy equipment manufacturer makes major improvements using Siemens PLM Software solutions

Products

NX, Teamcenter, Tecnomatix

Business challenges

Sharing data securely among globally distributed R&D teams

Reducing maintenance workload

Addressing slow response rates

Keys to success

Establishing a unified portal for organic growth and development

Building a global R&D, manufacturing, sales and service information system

Enabling business intelligence-based decision making

Results

Shortened development cycle by 30 percent

Reduced prototype and test costs by 50 percent

Increased design accuracy by 30 percent



Foton Lovol increases accuracy and reduces costs using NX, Teamcenter and Tecnomatix

Improvements in product development

Foton Lovol International Heavy Industry Co., Ltd. (Foton Lovol) has made major improvements in product development using product lifecycle management (PLM) solutions from Siemens PLM Software, including Teamcenter® software, NX™ software and the Tecnomatix® portfolio, across the organization for basic operations and maintenance, research and development (R&D) management, and aftermarket activities. The use of Siemens PLM Software solutions has helped Foton Lovol establish an efficient, accurate, secure and cost-effective PLM system,

which provides an accurate data source for other systems and enables data consistency across the platform.

Foton Lovol is a large industrial equipment manufacturer of construction machinery, agricultural equipment, vehicles, and core components. In 2013, the assessed value of the “Lovol” brand reached 21.558 billion yuan.

To maintain sustainable growth in a rapidly changing market, the company developed a strategy of connotative growth, structural adjustment and globalization. Based on anticipated international development needs, Foton Lovol began to build a business management and operational platform to develop products more rapidly.

Results *(continued)*

Reduced R&D costs by 20 percent

Increased change timeliness by 25 percent

Ensured a 99.9 percent accuracy rate of data distribution

Reduced idle labor and materials by 5 percent



The company encountered some difficulties in business restructuring and transformation. While Foton Lovol has set up several institutes or technology centers in China, Italy and Japan, the company faced the challenge of overcoming cultural differences in achieving cross-regional, cross-border, cross-WAN, multi-disciplinary and efficient collaborative R&D and design.

While the R&D operations frequently share and borrow data from different product

lines, managers wondered how to encourage secure data re-use and reap cost savings. Foton Lovol's operations had used the concept of "one bill for one vehicle" bill of materials (BOM) management, with only a few product design variants. However, this method exposed huge maintenance workloads and slow responsiveness. "We faced the challenge of how to continue to improve our market responsiveness," says Li Jinliang, IT (information technology) director. "Because each

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Li Jinliang
IT Director
Foton Lovol

different Foton Lovol division had applied different design software systems, we needed to effectively manage design data from all these systems on a unified PLM platform.”

A three-step strategy

To solve these issues, Foton Lovol established its own information platform, defining the overall objective of IT construction at the very beginning of the planning process using a three-step strategy.

In order to meet the company's connotative growth management and development goals, the first step was to solidify the foundation; continue optimization; regularize the company's business management and processes; and build an information system platform using a group structure, distributed applications and a unified portal. The second step, in the context of globalization, was to gradually establish the global R&D, manufacturing, sales and service information system. The third step, designed to establish IT as a core competency of the company, was to provide a business intelligence-based decision-making process in accordance with the company's strategy for effective management of enterprise knowledge assets.

Foton Lovol has established platforms for basic operations, R&D management, supply chain management and marketing and aftermarket activities, covering all the company's core products and services.

These four platforms support unified PLM R&D, unification of an ERP system provided by SAP AG, unified call centers and a unified basic network to help Foton Lovol quickly adapt to business needs and effectively support global business expansion.

“The PLM R&D platform is an important link in Foton Lovol's overall information system,” says Li Jinliang. “Through cooperation with Siemens PLM Software, we have established an efficient, accurate, secure and cost-controllable PLM system. The system provides an accurate data source for other systems, thus ensuring data consistency across the platform.”

The introduction of the PLM system has enabled the company to address such issues as R&D center global layout, distributed collaborative design, cross-disciplinary and cross-product-line data sharing, data accuracy and consistency, data security, change accuracy and timeliness. By applying the Siemens PLM Software solutions for different business needs, Foton Lovol has also addressed such issues as business development and R&D design, improved R&D management, reduced costs and enhanced data accuracy.

System selection criteria

Foton Lovol management carried out a comprehensive survey of available mainstream design software systems, and developed its selection criteria. “We wanted the software to have a wide range

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of applications, to provide a seamless connection within the PLM system and to support effective collaboration with the entire information technology platform," says Li Jinliang. "The software should also have sound operability, scalability and support rapid business development. Based on our research, Foton Lovol affirmed that Siemens PLM Software technology can effectively manage product R&D design and support a data bridge from R&D to after-sales, with strong system scalability for effective support of cross-business and cross-regional R&D design. So we ultimately chose three products from Siemens PLM Software: Teamcenter, NX and Tecnomatix."

The tight integration of Teamcenter with NX enables design engineers to complete product design using NX, and manage the data using Teamcenter for production guidance. "During implementation, the application of Teamcenter and Tecnomatix helped us facilitate the whole process – layout and design, simulation and verification for manufacturing execution," says Li Jinliang. "This has helped improve production efficiency, reduce costs and improve the enterprise's competitive advantages." Using Siemens PLM Software solutions, Foton Lovol has shortened the development cycle by 30 percent, reduced prototype and testing costs by 50 percent, increased design accuracy by 30 percent, reduced R&D costs by 20 percent, increased change timeliness by 25 percent, ensured a 99.9 percent accuracy rate of data distribution, and reduced idle labor and materials by 5 percent.

"The combination of business and information technology is a mutually reinforcing and improving process," says Li Jinliang. "The information platform has driven business transformation, which requires effective support from the information platform."

In the first phase of a pilot project, Foton Lovol established a unified PLM R&D platform and integrated the agricultural equipment business, engineering machinery business and vehicle business to an R&D platform. The company organized discussions between a number of research centers to unify product coding rules, drawing templates, product resource management, data approval, design change management, data sharing requirements and other aspects of different businesses.

During the second phase of the pilot, through the full support of Siemens PLM Software and related service providers throughout system testing, the company overcame the difficulty of migrating large quantities of historical data, successfully avoided manual data migration, and eliminated a tremendous amount of work for its operations departments.

The third phase of the pilot addressed issues the company's R&D centers faced in terms of cultural differences, work habits, design philosophy and management style compared to that of its domestic counterparts. In the past it was challenging to communicate using only phone calls and e-mails with overseas R&D centers. "The use of Siemens PLM Software technology has helped Foton Lovol identify business needs and solidify those needs into the system, to enable improved cross-border collaborative design," says Li Jinliang.

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Solutions/Services

NX

www.siemens.com/nx

Teamcenter

www.siemens.com/teamcenter

Tecnomatix

www.siemens.com/tecnomatix

Customer's primary business

Foton Lovol International Heavy Industry Co., Ltd. is a leading manufacturer of construction machinery, agricultural equipment and vehicles.

www.fotonlovol.com

Customer location

Weifang, Shandong Province
China

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Using this platform, Foton Lovol can more effectively absorb advanced design concepts and techniques from overseas R&D centers to improve the capabilities of critical core components, narrow the gap with international standards, effectively integrate global resources, reduce costs, shorten cycles, improve product output

quality and enhance the enterprise's core competitiveness and international influence. Using product lifecycle management technology from Siemens PLM Software has helped Foton Lovol build a solid foundation for the company's global development strategy.

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