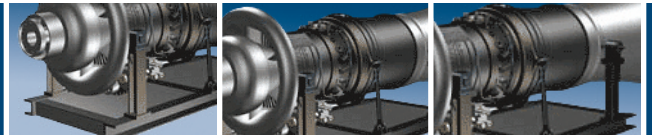


Lean initiative revolutionizes new product development at Liming Aero-Engine

PLM technology forms the foundation for Chinese aircraft engine manufacturer's transformation

www.ugs.com



► Issues:

- Create a lean enterprise
- Reduce costs
- Shrink product development cycle
- Improve quality

► Approach:

Employ single digital model from design through manufacturing

Use PLM solution to:

- enhance engineering/manufacturing collaboration
- improve flow of information throughout the enterprise
- increase knowledge re-use

► Results:

Faster information retrieval and more convenient data sharing

Design change time slashed by 48 percent

Process planning time, including approval cycle, reduced by 50 percent

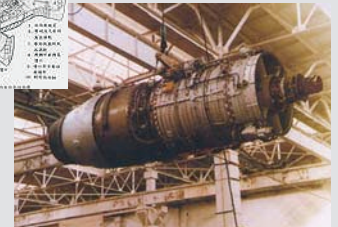
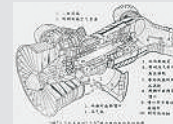
Jig and fixture development time down by 51 percent

SHENYANG LIMING AERO-ENGINE GROUP CORPORATION

- Liming Aero-Engine's mission is to transform itself into a lean enterprise that combines new thinking and values with advanced information technology.

State-owned enterprise undergoes a transformation

Founded in 1954, Shenyang Liming Aero-Engine Group Corporation (Liming) is China's first jet-propelled aircraft engine manufacturer and one of the country's key development projects. Liming employs more than 10,000 people. The company's business scope includes production and maintenance of aircraft engines, outsourced non-aero components and fuel engines, as well as steel products.



This state-owned company is currently in the process of transforming itself into a lean enterprise. Liming's previous product development process was characterized by a serial workflow based on the transmission of paper documents, a distributed and ineffectively integrated personnel organization and an out-of-date, non-collaborative information technology system. In the spirit of the lean initiative, Liming management has been studying the strategies of leading international defense and aviation corporations. They have also established specific goals within the lean initiative. These include better flow of information through the enterprise, optimized use of manufacturing resources, lower product development costs, a shorter product development cycle and improved product quality.

Supporting a lean philosophy with PLM technology

Liming's management understands that this vision must be coupled with advanced information technology if it is to become a reality. This is why the company implemented PLM technology from UGS. Management views the UGS PLM solution as a key enabler in their company's transformation. The transformation is accelerated by leveraging UGS' enterprise portfolio including NX™ software, Teamcenter® software and Tecnomatix™ software. "Liming understands the value and importance of PLM and digital manufacturing technology in streamlining product lifecycle processes. The company has the skills and experience necessary to capitalize on the existing market opportunity and PLM is critical to enable us to unlock that opportunity," says Xu Bailin, vice president, Shenyang Liming Aero-Engine Group Corporation. "UGS was a clear

Solutions/Services

NX

Teamcenter

Tecnomatix

Client's primary business

Shenyang Liming Aero-Engine Group Corporation is involved in the production and maintenance of aero engines, outsourced non-aero components, fuel engines and steel products.
www.lmaeg.com

Client location

Shenyang
China

Special recognition

Winner of
AP PLM Excellence Award 2005

“UGS was a clear choice as our PLM partner based on its best-in-class, open solutions and its commitment to supporting customers in China.”

“We expect to increase production capacity by 20 percent to 50 percent upon completion of the project.”

Xu Bailin
Vice President
Shenyang Liming Aero-Engine Group Corporation

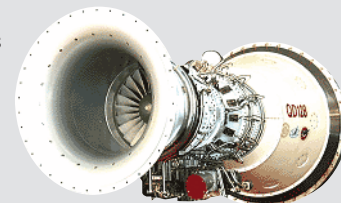
choice as our PLM partner based on its best-in-class, open solutions and its commitment to supporting customers in China.” Also, UGS and Liming have a history of successful collaboration going back more than 10 years.

Project teams consisting of members from Liming along with local and international UGS experts handled the implementation of the PLM system. It was done in phases starting with a four-month initial assessment in which UGS helped Liming define the requirements for the system. Next, Liming initiated a pilot project involving multiple sites. The success of this project led to the implementation of the solution company-wide, which is expected to be finished by the end of 2005. “We expect to increase production capacity by 20 percent to 50 percent upon completion,” adds Xu.

Transformed process delivers results

Liming's new development process is based on a single digital product model that is created in NX during the design phase and then leveraged for downstream operations, including manufacturing through the use of Tecnomatix software. Teamcenter provides the product knowledge management and collaboration infrastructure that brings together Liming's wealth of product and design information in a managed development environment. The solution's open, integrated environment enables, for instance, design work done by Shenyang Aero-Engine Research Center to be integrated much more closely with the production work, handled by Liming.

One of the most visible early benefits of the PLM implementation was faster information retrieval. Another was more convenient data sharing. Both are a direct result of replacing previous paper-based processes with Teamcenter-based digital lifecycle management. In addition, efficiencies made possible by PLM are translating into measurable process improvements. For example, the time required to execute a design change has been reduced by 48 percent. Process planning time, including the approval cycle, has been cut in half. Jig and fixture development is down by 51 percent. Once the PLM system is fully implemented, the next steps include integrating PLM with the company's ERP and assembly process planning systems. As the infrastructure for its new product development initiatives, PLM technology from UGS is playing a key role in Liming's transformation to a lean enterprise.

**Contact
UGS**

Americas 800 498 5351
Europe +44 (0) 1276 702000
Asia-Pacific 852 2230 3333

www.ugs.com

