LS Industrial Systems improves product development productivity by 20% with PTC® solutions

LS Industrial Systems, Anyang Gyeonggi-Do, South Korea

Leading manufacturer uses PTC® Windchill®, PTC® Creo® and PTC® Creo® Elements/View® to modernize processes and increase design reuse, information-sharing, and collaboration.

LS Industrial Systems (LSIS) manufactures power transmission and distribution equipment, automation and control systems, and industrial equipment and systems. With revenues currently over $1 billion (USD), the company was recognized in 2008 by the Korea CEO association for being a leader in size, growth, profitability, and stability. In addition to its Seoul, South Korea, headquarters, the company also has operations in China, Vietnam, Iran, Poland, Indonesia, Japan, the United Arab Emirates, and the United States.

The Challenge: Manual, Disconnected Processes Hurting Productivity, Leading to Security Risks

Historically, product development data at LSIS was kept in silos; data was stored in the desktop CAD tool and managed either by individual engineers or by each department. Because product design information wasn't portable enough to be easily shared between design resources, design reuse was infrequent, and duplicate work was common. In addition, lack of a centralized knowledge database meant that when engineers retired or left the company, valuable intellectual property went with them. The company's insufficient CAD data management processes also left data vulnerable to external exposure. Lastly, without a Product Lifecycle Management (PLM) system, data had to be manually extracted from the CAD tools and entered into the ERP system to create the manufacturing bill-of-materials (mBOM).

The Solution: PTC Windchill and PTC Creo – Selected Over UGS® Teamcenter®

LSIS evaluated both UGS Teamcenter Engineering and PTC® Windchill® PDMLink® (a data management solution), ultimately choosing the PTC solution. In 2007, the company implemented PTC Windchill PDMLink 8.0 to support a complete flow of data from design to manufacturing. In addition, LSIS implemented PTC Creo – PTC's suite

of design software – enabling LSIS to improve its modular design capabilities and take advantage of advanced parametric modeling features and functions. Teams that didn't use CAD tools, yet needed to view 3D models, were provided with PTC® Creo® Elements/View – PTC's visualization solution – which enabled them to view the modular designs and apply them in their operations.

Results: 20% Increase in Development Productivity

Implementation of PTC's PLM system has brought centralized knowledge management and improved information-sharing to LSIS. With product information now available in real-time, the company is able to speed decision-making and ultimately get products to market faster. Today, LSIS is now systematically managing design data, protecting intellectual property, sharing real-time information about design status, and promoting reuse of designs. The PTC solution has also improved relationships with partners, as data can now products to market faster. Today, LSIS is now systematically managing design data, protecting intellectual property, sharing real-time information about design status, and promoting reuse of designs. The PTC solution has also improved relationships with partners, as data can now be shared easily and securely. In addition, PTC Windchill PDMLink allows the company's engineering and manufacturing departments to share bill-of-materials information more easily, increasing R&D capacity.

> The close cooperation between product designers and production engineers can bring about various desired effects, such as minimizing the number of parts used in a product, simplification of the assembly process, reduction of production lead times, enhancement of product quality, and cost reduction."

Jong-Ho Song
Manager, LS Industrial Systems

Modular Product Design for Variant Models

One of the key benefits of the PTC solutions system implemented at LSIS is that the company can now manage a greater range of product options for its customers. Since the product line of LSIS is so broad, a great deal of engineering bandwidth was needed to update and maintain the large number of product models. Now, using the modular design capabilities of PTC Windchill and PTC Creo, LSIS can more easily create product platforms, introduce new functionality across multiple models, and configure new models based on past designs. This model reuse helps LSIS develop new models faster than its competitors.

Above: LSIS developed this Susol Molded Case Circuit Breaker using PTC Creo.

Global Collaboration with Internal and External Teams

To reduce costs and ensure quick delivery of products, LSIS opened three global locations in China. In addition to these internally managed sites, LSIS also plans to expand its business and collaborate with external suppliers in China in the near future. As a result, collaboration across global boundaries is a principal focus of both design and manufacturing processes going forward.

Before implementing the PTC Windchill solution, all facets of product information – documents and drawings, emails, meeting requests, feedback, and design approval – were communicated between teams manually, often offline. There was no centralized record of these interactions, or logging of any changes that resulted. In addition, since information was being distributed and worked on by multiple resources in many different formats, it was difficult to prevent duplicate work or use of outdated design versions.

Above: PTC Windchill solution allows LSIS engineers to collaborate on the design of products, like this Susol Air Circuit Breaker.

PTC Windchill solution enabled LSIS to create a single set of product data that could be shared online with both global internal teams and third-party partners. This automated approach enabled centralized knowledge and record management, including historical tracking of team interactions, decisions, and changes. In addition, integrated, role-based security access now allows LSIS to define both the content and formats of data shared with each user, to protect intellectual property. Real- time workflow and approval processes allow global teams to more easily track steps in the product lifecycle and ensure prompt action on requests.

Jong-Ho Song, an LSIS manager, reports that as cooperative decision-making became more efficient, the productivity of overall operations increased correspondingly. “Systematic cooperation and communication using the PLM system has allowed LSIS to meet deadlines and avoid losing business,” says Song.

"This enables them to discuss how to formulate design specifications while keeping actual production in mind, minimizing the time wasted in making trial products. The close cooperation between product designers and production engineers can bring about various desired effects, such as minimizing the number of parts used in a product, simplification of the assembly process, reduction of production lead times, enhancement of product quality, and cost reduction."

explains Song

Engineering and Manufacturing Collaboration

In addition to improving collaboration with globally located teams, PTC's solutions have helped LSIS improve coordination between product design and manufacturing groups. "We make it a point to have our product designers and production engineers work as a team when launching a product development project to ensure their close cooperation," says Jong-Ho Song.

The PLM system from PTC enables both product engineers and manufacturing engineers to be involved in the definition, analysis, and approval process throughout the full product lifecycle – not just at specific points in time. This tight collaboration allows all affected groups to fully assess and understand the impact of any changes that need to be made to the product design. Song says an integrated PLM platform promotes concurrency in product development by installing processes for sharing design information across all relevant individuals in the initial development stage – thereby, enabling all product stakeholders to work on the design simultaneously.

"The relevant sectors can supply feedback to the product design sec- tor, thereby upgrading the level of perfection at the design stage, which means a reduction of failure costs," Song says. "Such a process also makes swift communication and decision-making possible."

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