

INDUSTRIAL EQUIPMENT CASE STUDY

DOOSAN INFRACORE



Challenge:

To become one of the top three global machinery suppliers by 2020, Doosan Infracore wanted to improve the productivity and product quality of its 14 subsidiaries and R&D centers in the US, China, Norway and the Czech Republic.

Solution:

The company chose Dassault Systèmes' **3DEXPERIENCE** platform for product development, multi-site collaboration and manufacturing simulation.

Benefits:

With the **3DEXPERIENCE** platform, Doosan Infracore expects to reduce product development time thanks to concurrent engineering, cut errors and rework during production phase by 90% with 3D virtual simulation, and enhance data protection via a common shared database.

GLOBAL INDUSTRIAL MACHINERY SUPPLIER SEEKS GLOBAL "TOP THREE" STATUS

Part of the Doosan Group, Doosan Infracore began as a shipbuilding machinery plant in 1937. Since 2005, it has experienced an average annual growth rate of 18%. Today, it is a globally renowned player in the industrial equipment industry, and is ranked fifth in the machinery, machine tool, and small equipment construction sector worldwide. It is also the number one manufacturer of mid-size diesel and gas engines and articulated dump trucks in Korea.

Since it joined the Doosan Group in 2005, Doosan Infracore has been busy expanding its business, acquiring companies such as Bobcat and CTI in the USA, ATL in Germany, Moxy Engineering AS in Norway, Yantai Machinery in China, and the machine tool business division of Doosan Mechatec in Korea. As a result, the company's exports increased almost two-fold in just two years, earning it the 2 Billion Dollar Export Tower Award from the Korea International Trade Association Day in 2007. Maintaining this steady growth, Doosan Infracore has positioned itself to overtake its global competitors and become one of the top three industrial machinery manufacturers worldwide.

MULTI-SITE DESIGN AND COLLABORATION

To achieve its goal to become one of the top three global machinery suppliers by 2020, Doosan Infracore needed to provide its 14 subsidiaries and R&D centers around the world with a way to deliver consistently top quality products.

The company faced a number of challenges: from reducing product development time, errors and rework to improving data integration and security throughout the product lifecycle. It was difficult for the company to address these challenges with its existing PLM system, which was a collection of heterogeneous, tailor-made, in-house software applications that generated data incompatibility issues from one site to another.

Keenly aware that it needed better multi-site collaboration, the company decided to implement a powerful and integrated global collaborative environment. After one year analyzing several PLM solutions, Doosan Infracore chose Dassault Systèmes' **3DEXPERIENCE**® platform including CATIA V6, ENOVIA V6, and DELMIA V6. "The **3DEXPERIENCE** platform is the most appropriate solution in terms of functionality, performance, and support strategy," Tae-hwan Kim, Executive Vice President of Doosan Infracore R&D said.

REDUCING DEVELOPMENT TIME, ERRORS AND REWORK

The **3DEXPERIENCE** platform's applications are seamlessly integrated in a unique collaborative work environment, which perfectly reflects Doosan Infracore's R&D motto: 'Design anywhere/Build anywhere.' "The platform is expected to improve enterprise collaboration dramatically; even non-design teams such as marketing and sales, which are not necessarily familiar with Computer Aided Design tools, will be able to consult the 3D product model in real time using their standard-issue laptop computers," Kim said.

Concurrent engineering and implementing design changes early in the process help Doosan Infracore engineers to



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— Tae-hwan Kim
Executive Vice President of Doosan Infracore

drastically reduce their product development time. Bills of Materials (BOM), which were managed separately previously, can be managed with one real time data during entire process – planning, development, design, sales, and service. It simplifies the verification process and enables the company to better estimate costs, providing more control over budgets and schedules.

Moreover, 3D virtual testing and simulation at the design and production stage is expected to reduce errors and rework by more than 90%. “Manufacturing simulation in the **3DEXPERIENCE** platform including DELMIA’s Final Assembly Planning and Work Instructions solutions, enables users to detect and correct errors early in the design stage instead of downstream in the production phase when it would cost much more to rework a design,” Kim said.

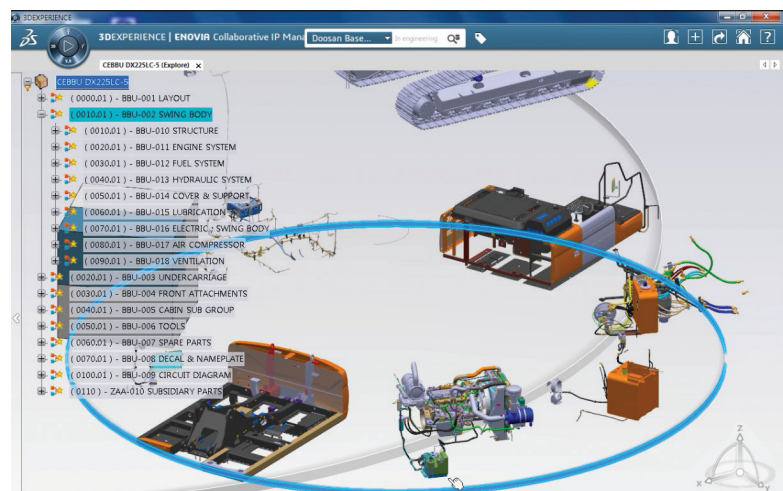
“The variant configuration capabilities of ENOVIA allow Doosan Infracore to define product direction in 3D by visualizing global variants early in the product planning phase, eliminating design changes further downstream and shortening product development and manufacturing time,” Kim said.

Finally, design data is more secure since it is stored in a common database and not distributed in individual computers. “Finding information and knowing that it is the right, most up to date information, is ideal for real-time collaboration,” he emphasized.

INNOVATING TO BECOME A WORLD-LEADING POWER SUPPLY VENDOR

At the dawn of the Fourth Industrial Revolution, next-generation business platforms such as the **3DEXPERIENCE** platform are essential to companies such as Doosan Infracore that aim to design anywhere/build anywhere. The company plans to innovate further and to expand its use of the **3DEXPERIENCE** platform. “A global collaborative environment with 3D as our universal language is critical if we want to accelerate innovation, minimize costs, and improve quality,” Kim said.

“It’s our gateway to the global league of top-tier suppliers. Thanks to our partnership with Dassault Systèmes, Doosan Infracore is equipped with leading-edge applications dedicated to the industrial engineering industry. We now plan to expand the scope of the **3DEXPERIENCE** platform to further strengthen our competitive edge on a global scale,” he concluded.



Top image: Doosan Infracore heavy excavator

Bottom image: Excavator displayed in **3DEXPERIENCE** platform

Focus on Doosan Infracore Co., Ltd.

Manufacturer of construction machinery, machine tools, engines, attachments and utility equipment

Products: construction machinery, machine tools, automation systems, diesel and gas engines

Employees: 15,200

Revenue: US\$7.69 billion (2014)

Global presence: 21 factories and 15 R&D centers and 51 branches in 22 countries

Headquarters: Incheon, Korea

For more information
www.doosaninfracore.com

Our 3DEXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 190,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.

