

MegaGen

Cutting product development time in half with CATIA PLM Express



Overview

■ Challenge

MegaGen needed to upgrade its limited 2D design system to a more advanced 3D version to ensure flawless internal communications while developing ultra-precise dental implant products that simplify surgery and minimize the patient inconvenience.

■ Solution

CATIA PLM Express helps MegaGen to develop next-generation implant systems aimed at saving time and costs for new product development.

■ Benefits

With CATIA PLM Express, MegaGen has improved productivity through enhanced communication between its design and production teams, and reduced time-to-market by 50%. 3D modeling also helped to cut simulation costs by up to 30%.



“Our 2D design system cannot share 100% of the product information between the design and production teams. 3D simulation and improved communications are the biggest benefits of CATIA PLM Express.”

Yong-Sang Kim
Process Innovation Manager
MegaGen



World's first wide implant system provider

Established in 2002, Korea-based MegaGen Corporation develops, manufactures and markets advanced dental implant systems (a prosthesis set into the gums), more than 1,400 implant-related items, guided bone regeneration materials, and dental equipment. It developed the world's first wide implant systems that are optimized for the mouth bone structure of Korean patients.

MegaGen has grown rapidly over a short period, thanks to its proactive research and development (R&D) investment. It has established its own R&D center and invests about 10% of its total revenue in R&D. The innovative company has filed for 20 domestic and 13 international patents.

“We develop implant systems optimized to the Korean lifestyle of eating hard and tough food, and focus on precise and robust product development,” said

Jae-Soo Ryu, marketing manager of MegaGen.

“As our customized products come in various diameters and lengths, patients can now choose implant systems that are optimized to their mouth structure,” said Yong-Sang Kim, process innovation manager of MegaGen.

2D drawings mean communication and manufacturing challenges

In its ongoing efforts to develop ultra-precise implant products that simplify surgery and minimize patient inconvenience, MegaGen needed to upgrade its 2D design system to improve productivity and communication between the design and production teams.

“It's nearly impossible to synchronize each team's understanding using 2D drawing. This resulted in difficulties in communications and delays in the manufacturing process,” said Kim.



Every tooth has a unique shape and structure so implant systems need to have different diameters, lengths and weights, making the development process long. Sometimes, it takes a year to develop a single implant system.

CATIA PLM Express enables precise 3D modeling

Since implant systems are aesthetic prosthesis set into the gums, their design is very complex and requires extreme precision. MegaGen turned to Dassault Systèmes' CATIA PLM Express to design and manufacture implant systems with a higher level of precision.

MegaGen had to design complex shapes that are customized to each patient and ensure the implant system is safely established inside the patient's mouth. CATIA PLM Express streamlines the design process, enhancing the quality of the implant system. As a result, MegaGen is now able to provide a variety of products that are customized to each patient.

"Our existing 2D design has a limit for developing screw-shaped implant products. We need 3D design software to create the various diameters and lengths in the single system. Saying you need 3D software is not a very flattering reason for explaining why MegaGen chose CATIA PLM Express." said Kim.

CATIA PLM Express makes it easier to modify the design of existing products. With one simple design modification,

MegaGen can expand its product portfolio with systems catering to various diameters and lengths. CATIA PLM Express facilitates knowledge-based modeling letting engineers of MegaGen utilize existing designs to develop new products, improving R&D productivity.

Development time cut by half, cost down by over 20%

The solution enables better internal communications for collaboration between the design and production teams, resulting in fewer trials and errors, and lower development cost.

CATIA PLM Express has reduced development time by 50%. "Information sharing among collaborators is much easier and modification can be applied using 3D testing." said Kim.

In addition, by creating 3D models in CATIA PLM Express. MegaGen engineers no longer need to create physical prototypes of implants, resulting in development cost savings of more than 20%. Finally, CATIA PLM Express enables MegaGen to make rapid changes to a design based on feedback from a dentist.

"The 3D models we create with CATIA PLM Express help us to communicate with dentists, who are core customers of our implant system, and get their feedback. The modeling features can also be leveraged for marketing purposes."

Yong-Sang Kim
Process Innovation Manager
MegaGen



DASSAULT SYSTÈMES
10, Rue Marcel Dassault
78140 Velizy Villacoublay - France
Tel: +33 (0)1 61 62 61 62



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