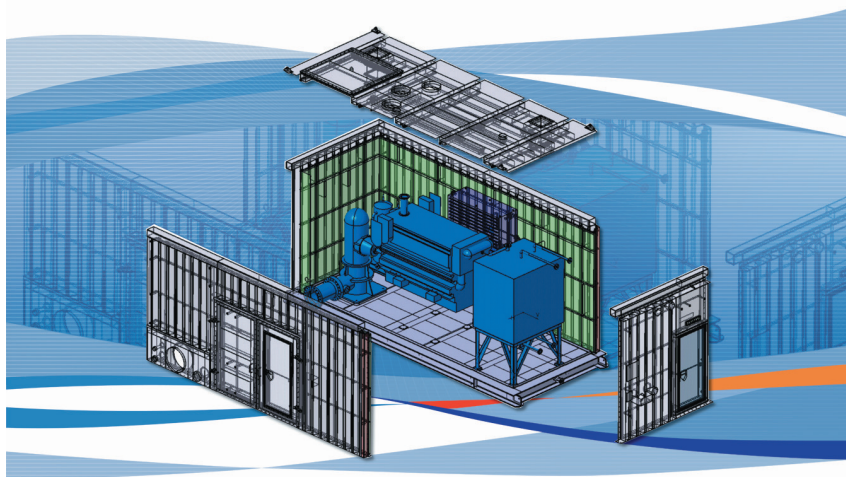


UK manufacturing company Mech-Tool Engineering proves the value of CATIA V5



“It’s early days, but progress is very promising and we expect to make substantial savings in the time it takes to produce manufacturing drawings for components modelled in CATIA V5.”

– Ron Davison,
Technical Director, Mech-Tool Engineering

Overview

- *A decline in its traditional business, combined with aggressive competition from suppliers with significantly lower labour costs, was eroding Mech-Tool’s profit margin*
- *Mech-Tool chose CATIA V5 and implementation services from IBM Business Partner TransCAT PLM to radically transform its design process and recapture margin*
- *Initial benefits include a potential 25-fold reduction in manufacturing drawing production time and substantial downstream savings in production of bills of materials (BOMs) and elimination of manufacturing re-work.*

CATIA V5 helps enclosure maker think beyond its boxes

The North Sea is one of the world’s harshest environments for offshore oil production. But Ron Davison, Technical Director of Mech-Tool Engineering, knows the competitive environment can be just as punishing for the industry’s suppliers.

“Not long ago there were companies all across the UK servicing the offshore industry and making a reasonable living,” Davison recalls. “Today, 80 percent of our products are sold into the world market and only a third of our business is offshore.” Margins, meanwhile, continued to shrink.

Mech-Tool responded by diversifying from explosion and fire-proof enclosures for offshore oil rigs, adding industrial noise-control enclosures and packaged equipment modules for pumps and engines. But everywhere it turned, it ran into foreign competitors with labour costs as much as 65 percent less than the UK’s.

“We knew that making a small tweak here and there wasn’t going to work any more,” Davison said. “Our biggest cost centres are engineering and manufacture. We had to make a radical change if we were going to recapture our margins.”

CATIA V5 and TransCAT PLM:

The right solution

Just moving Mech-Tool’s design process from 2D to 3D could fundamentally improve Mech-Tool’s economics. But finding a system that could deliver was difficult. “Our manufacturing process is totally reliant on drawings of a certain quality,” Davison said. “The first system we tried was fine for modelling, but on the drawing side it was totally inadequate.”

Mech-Tool next turned to IBM Business Partner TransCAT PLM. Sales engineer Andy Simkins introduced a novel approach to creating new designs. TransCAT PLM helped Mech-Tool create reusable Knowledgeware templates in CATIA V5, developed by Dassault Systèmes, to capture its processes and standards, leverage its existing know-how, and avoid having to create new designs from scratch.



Reusable knowledge templates are part of the Generative Mechanical Design (GMD) solution in CATIA V5. GMD has enabled Mech-Tool to slash new design development time, reduce engineering and manufacturing costs, and boost accuracy.

“We knew instinctively Simkins was right,” Davison said. “But when he first mentioned CATIA V5 I thought I’d never convince my board. We thought CATIA was something Ford and Boeing use that costs lots of money and was way above what Mech-Tool needed. Now we know better. We no longer look at the cost of the software. We look at the value of the return.

“TransCAT PLM’s know-how was invaluable to getting the return from the investment. Although all of this was new to us, it wasn’t new to them.”

On track for a 25-fold improvement

Mech-Tool is implementing CATIA V5 in stages, beginning with the intake modules for its acoustic enclosures.

Although that is just 25 percent of one product line, the company is on track to achieve what it believes can be up to a 25-fold reduction in the time taken to produce manufacturing drawings for components modelled in CATIA V5.

Creating bills of material from conventional drawings once consumed 30 percent of the company’s design hours. Now bills of material are generated instantly and error-free. “A serious mistake in a BOM can result in dire commercial consequences,” Davison said. “We can substantially mitigate that risk.”

Seeing the finished product in 3D helps the company’s metalworkers better interpret their 2D drawings, saving time and eliminating guesswork. “In the past we generally had to go to the factory floor and sort problems,” said Martin Harris, Mech-Tool’s CAD Team Leader, who recently used CATIA V5 to engineer a complex 3D box. “With this one, it was a first-time fit.”

3D visualisation also is valuable to clients: Harris recently showed a client design variations for a 45-ton pump enclosure in real-time using CATIA V5. “Because they could see it and watch as we played with various options, the client was able to do things in a more efficient way,” Davison said. “They were very appreciative and impressed. We think that kind of extra value will help differentiate Mech-Tool in the marketplace.”

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