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HMD Sealless pumps transforms its engineering & product creation process with AESSiS – Advanced Engineering & Enterprise Solutions.

When it needed to improve the process by which its range of pumps are engineered in order to speed time to market, reduce costs, and further enhance quality, the company turned to AESSiS and RLE to help it develop and implement a new product creation strategy.

Customer: HMD Sealless Pumps
Web Site: www.hmdpumps.com
Country or Region: United Kingdom
Industry: Manufacturing—Sealless Pumps

Customer Profile
Part of Hamilton-Sundstrand, a United Technologies subsidiary, HMD Sealless Pumps is a global leader in the production of sealless pumps. As the first to develop and perfect the magnetic drive for pumping applications, over fifty years ago, HMD Sealless Pumps have honed and perfected this expertise to provide a comprehensive range of pumps that all offer the significant benefit of zero leakage.

AESSiS Services
Teamcenter Services Portfolio

For more information about other AESSiS customer successes, please visit: www.aessis.com/case-studies

Business Needs

HMD produce ranges of standard and highly engineered pumps to order. The engineered pumps create special challenges; just ask Callum McKee.

"Because our continued business success relies on rapidly engineering pumps to order for very demanding industrial applications, we need effective PLM processes that ensure our products meet customer's precise technical requirements whilst allowing us to minimise our engineering costs via reuse of information and designs across projects," says McKee, the PLM Program Leader for HMD. "To grow our business we have to be able to quickly deliver new and replacement pumps at outstanding levels of quality to our customers so we recognise the importance of having world class engineering information and process management capabilities"

As part of a strategic review, HMD looked at their processes throughout the product lifecycle and targeted areas for improvement. Product engineering, program management, quality management and change processes were among the activities the company wanted to enhance.

The first problem was that the perception of PLM within HMD had been damaged because a previous implementation of Teamcenter had not been adequately aligned with the process needs of the company and, as a result, the tool had gradually fallen out of regular use. However, HMD is a company that is committed to continuous improvement in product quality and velocity and David Clark, the Senior Engineering Manager at HMD, recognised that an opportunity to re-energize the PLM initiative and use Teamcenter more effectively to reduce errors, rework, scrap and delays was being missed. Clark determined that what HMD needed was a fresh look at PLM as a platform for achieving HMD's engineering process improvement goals.

Solution

At the time of their strategic review, HMD were already working with RLE International to migrate many of their legacy 2D drawings to 3D and decided to engage with an RLE partner, AESSiS to overhaul their use of Teamcenter and deliver the new approach. According to McKee, after the disappointment of the initial Teamcenter rollout, it was critical to HMD to get an expert and independent perspective and the company were quickly impressed by AESSiS's ability to provide clear, refreshing and objective input.

For HMD, another important aspect of working with AESSiS was value for money. Staffed by a team of highly qualified Teamcenter professionals with considerable experience deploying Teamcenter to companies around the world, AESSiS were able to

deliver a very proactive and solution based approach which resulted in a superior return on investment than experienced when working with previous vendors.

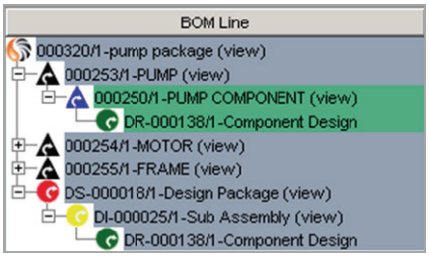
The new initiative began with a PLM diagnostic exercise, facilitated by AESSiS, to identify HMD's key PLM related issues, to measure how current engineering processes compared to PLM best practice and to establish consensus and a clear vision of how HMD's future processes should work in the context of PLM. This exercise then provided the basis for developing a comprehensive PLM roadmap that began with a focus on rebuilding strong PLM foundations in the product engineering group and went on to address issues in the areas of engineering change, quality and programme management.

The next step was for AESSiS and HMD to work together to map the company's product engineering requirements onto the Teamcenter toolset. An important goal here says McKee "was keeping the Teamcenter environment as 'out of the box' as possible. We knew some configuration would be necessary but we wanted to avoid getting into the realms of customisation. AESSiS were able to steer us through this complexity so that we made sensible and pragmatic choices and didn't dig any holes for ourselves".

Central to this effort was defining how HMD should structure its engineering bill of materials in Teamcenter. McKee again; "HMD build a tremendous number of pump products and product derivatives. Many of these, at first glance, appear geometrically very similar. They are differentiated however by the specification of a wide range of advanced materials which are absolutely crucial for performance in the demanding applications that our pumps are used. We needed an approach to model this complexity whilst providing an easy way to reuse design information across our pump range".

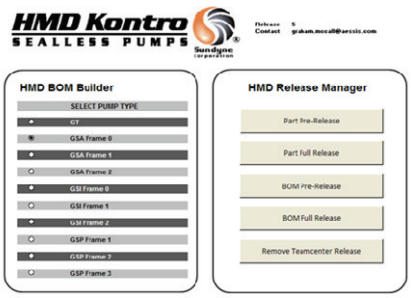
The solution that the joint AESSiS-HMD team came up with was a highly visual product structure framework, enabled by the definition of new Teamcenter item types and item attributes and by new search queries that allowed the new attribute information to be quickly interrogated. This new framework allowed HMD designers and engineers to work together concurrently to model both the 'as-designed' and 'as-built' complexities of their pump range and to easily find and reuse information and designs between projects and products.

The new framework was supplemented with the development of an interface between HMD's existing advanced bill of material planning tools and Teamcenter. This allowed Teamcenter



HMD Product Structure Framework for Reuse

to be pre-populated with module placeholders to which could be added part and design information. This, in turn, provided an extra degree of error proofing over the inclusion of required versus optional BOM lines when



HMD BOM Builder & Release Manager Application

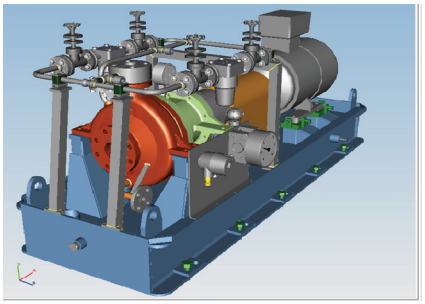
building complex engineering bills of materials for the first time.
The final key step in re-establishing strong PLM foundations within engineering was the development of release management tools that enabled an evolving BOM approach whereby long lead items could be released from Teamcenter into MRP ahead of short lead items.

This advanced Teamcenter configuration work was supplemented by clear, concise and role specific user guide documentation. According to McKee, the importance of easy to understand documentation to guide users through the complexities of Teamcenter could not be overstated. "We felt that neglecting this would be a false economy because without it users, especially new users, could have difficulty completing tasks. This would reduce their productivity and the productivity of those around them, create more errors and cause unnecessary frustration".

Benefits

Having re-implemented Teamcenter with the help of AESSiS, HMD have succeeded in establishing the strong PLM foundations in engineering that are such a vital pre-requisite for achieving broader PLM related process improvement goals across the organisation.

These foundations have provided HMD with a highly visual and easy to use way of modelling the complexities of its pumps as they are actually built and delivered to customers. Because of this, engineers and designers can now use Teamcenter's product visualisation capabilities with confidence to visualise complete pump packages and identify engineering issues much earlier in the project lifecycle. This has reduced the amount of rework and scrap in manufacturing and is helping HMD to further enhance levels of customer satisfaction by eliminating unplanned



delays.
What is more, HMD now have in place an advanced product structure framework that is aligned to their specific business needs and which facilitates the maximum possible amount of part and information reuse across the HMD pump range. Not only does this help HMD to reduce the design lead time for new and replacement pumps significantly, it also allows the company to commonise parts and aggregate component volumes to reduce external material spend.

Ultimately, it is all about providing HMD customers with the very high quality product they have come to expect more cost effectively and at lead times that better the industry expectation. With their new PLM strategy firmly in place, HMD are set to exceed their customer's expectations on all three counts.