EnerSys speeds time to market with an authoritative source of truth across their NPIs, leveraging PTC Cloud Services and Windchill SaaS

EnerSys is an industrial technology leader serving the global community with mission-critical stored energy solutions that meet the growing demand for energy efficiency, reliability, and sustainability. They are dedicated to providing people everywhere with accessible power, helping them work and live better.

EnerSys powers the future of industry

EnerSys manufactures and distributes motive and reserve power batteries, battery chargers, power equipment, and more, to customers worldwide. Based in Reading, Pennsylvania and with factories and design centers around the world, EnerSys has over 100 years of experience delivering energy storage systems and solutions to customers across a wide range of industries and applications.

Dedicated to continuous improvement and constant innovation, EnerSys is moving towards delivering futuristic new product introductions with sustainable technologies like lithium-ion. Lithium-ion technology relies on fewer raw materials than lead-acid, making it more environmentally friendly.

EnerSys Power/Full Solutions™

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"Our goal is, and always has been, to develop and lead with innovative technology designed to deliver the best user experience possible," says Joern Tinnemeyer, Senior Vice President and CTO of EnerSys.

EnerSys needed a new approach to their operations—one that leveraged an authoritative source of truth for all engineering data

For manufacturers, moving from lead-acid to lithium-ion technology means shifting from a discrete, raw-materials-driven manufacturing approach to a more process-centric approach. This dynamic change impacts EnerSys at every layer of their business: sales, quality, manufacturing, the supply chain, and more. Across the entire ecosystem, there is a renewed emphasis on improving efficiency, optimizing total cost of ownership (TCO), and responding to demand faster.

In order to meet shifting demands and rising complexities, EnerSys decided to transition away from ERP-centric data management to a product lifecycle process-driven approach. This meant that people, processes, and technology all needed to be organized around products with governance and traceability.

"Collaboration, design principles, engineering principles, and more—it's all evolving. Even the product nature itself drives us towards that better way of working," says Sudip Pattanayak, the Global PLM Head and Architect at EnerSys.

EnerSys began by identifying key areas where they could transform their operations and drive improvements. Because global teams must collaborate with one another to execute and standardize the complex operations and customizations that lithium-ion batteries require, EnerSys decided to focus on enhancing collaboration and applying concurrent engineering principles. Facilitating parts-centric governance was another goal. By eliminating data and information siloes across different systems and bills of material, EnerSys would be able to provide more accurate manufacturing information to production on time, as well as find and reuse manufacturing processes and

resources. Ultimately, for EnerSys to launch new products with increased electromechanical complexity, it was imperative they leverage a true engineering digital transformation tool: a global product lifecycle management (PLM) solution that establishes an authoritative digital thread.

EnerSys implemented Windchill SaaS to increase collaboration, manage product data, and improve workflows without heavy IT overhead or hardware commitments

EnerSys partnered with PTC to implement Windchill SaaS on the PTC Cloud for the management of product data, BOMs, verification and validation processes, and suppliers. Windchill is a comprehensive PLM software for data governance and traceability, providing an authoritative source of truth across engineering, operations, suppliers, and customers. Windchill's open architecture enables easy integrations with other enterprise systems and serves as a foundation for a product-driven digital thread. Enersys determined that the time to value would be faster and the total cost of ownership would be significantly reduced with Windchill in the PTC Cloud, maintained by PTC experts.

Windchill's SaaS-managed service offering includes a selection of enterprise packages and role-based add-ons for engineering, quality, manufacturing, service, and the extended enterprise with ThingWorx Navigate. It makes the PLM solution easier to configure, scale, and secure, and helps facilitate collaboration and agility across the extended enterprise—including in remote work environments.

With a reliable and secure digital foundation for product development and manufacturing, EnerSys planned to improve processes, unlock efficiencies, and enable people to better use and manage data. Ultimately, EnerSys set the stage for significant financial, time to market, and quality improvements.

EnerSys takes advantage of PTC Cloud-based services and platform

Leveraging the PTC Cloud, EnerSys ensured peak performance of their technology through proactive performance management. PTC Cloud experts helped stand up EnerSys solutions quickly and securely with the right configuration and infrastructure. The functionality, performance, and security of the PTC Cloud enables manufacturers to take advantage of cutting-edge technology while reducing administrative burdens and hardware costs—allowing them to instead focus resources on high-value business opportunities.

"Working with the PTC Cloud was a key strategic choice for us, as we move towards a cloud-first future." – Sudip Pattanayak, Global PLM Head and Architect at EnerSys

EnerSys uses Windchill and PTC Cloud to unify their new product implementation process

Using Windchill and the PTC Cloud, EnerSys is creating a unified new product implementation (NPI) process, from concept to release. This is a multi-year digital transformation story that will ultimately expand into other processes as well.

Their goal is three-fold: first, they'll integrate and connect all bills of materials (BOMs). Then they'll enable global design collaboration for product development and create a global standardization of templates and processes. And finally, they'll create an integrated manufacturing process management environment to exchange information between product data management (PDM), enterprise resource planning (ERP), and manufacturing execution systems (MES).

Currently, EnerSys has unified their BOMs to enable a step-by-step maturity process. They created a part-centric foundation for operations by unifying BOM management, between engineering bills of material (EBOM) and manufacturing bill of material (MBOM). Variants, configurations, and associated processes are synced and exchanged between systems. Throughout the manufacturing process, these unified BOMs enable the traceability of components from manufacturing to design.

EnerSys also plans to incorporate the entire quality process in Windchill. Quality information is currently distributed across different folders, emails, and more. They'll collect all of this supplier quality and manufacturer quality information in a single location through Windchill. Then they'll establish a strict gatekeeping process so people can always find and access the quality information they need. In addition, EnerSys will integrate their current ERP (SAP) data, bills of process, electronic work instructions, and more, into the PLM tool for a completely unified experience.

EnerSys is doing more with less, driving faster time to market, and enhancing quality

EnerSys has already made significant progress towards their goal of reducing costs, improving time to market, and increasing quality. They've expanded to multiple systems and won the support of people on the ground floor.

"After the initial pilot phase, the business impact and value realized were obvious. That created the demand to add more NPI projects throughout EnerSys," says Pattanayak. "In the beginning, I was just managing one product family. Now, we've expanded to five in about seven months."

Reducing costs

In terms of financial impact, EnerSys does more with less by increasing reusability and reducing the cost of rework. Without a strong PLM system, manufacturers often end up with excessive duplication, redundancy, or the wrong parts.

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But with Windchill, EnerSys is improving part disposition and change management processes, flagging quality issues and adjustments faster than ever before. Rather than continue working on parts that won't meet quality standards down the line, they can quickly catch issues and reduce the amount of rework required.

Improving time to market

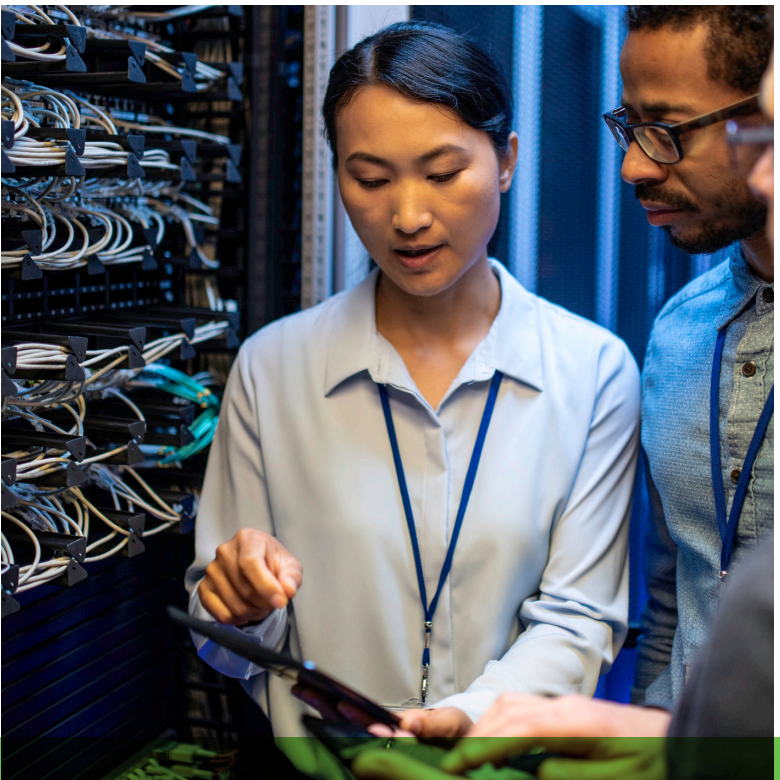
EnerSys improved their time to market by increasing collaboration and building uniform systems. Unified BOMs have cut down iterations and redundant discussions between manufacturing and engineering teams. For example, EnerSys used to rely on teams to report their own progress manually. If an engineering team needed to make changes to a supplier package, the PMO teams couldn't see that process happening or trace the cause of the issue.

Now, because all teams have access to the same BOM, the PMO team leverages Windchill for quick visibility into project status. PMO teams have a complete view across production, enabling them to conduct reviews in real time and reduce back and forth discussions between teams. This platform approach helps manage extensive variance requirements as well.

"The system BOM, which used to take months, is down to weeks. The system BOM development time has been reduced by adopting a model-based design approach," says Pattanayak.

Enhancing quality

Faster, more accurate processes have led to better designs and increased the quality of the parts that EnerSys produces. For example, EnerSys has greatly improved their deviation management process. Manufacturers can quickly record deviations and communicate back to the necessary teams for rework or trace them back to their root cause.



In terms of improving processes, quality teams are more effective gatekeepers at each stage of the journey. During the design phase, they can quickly see whether designers are implementing the right control characteristics. If there's an issue, they can work together to achieve the right approvals rather than letting the issue leave the design phase. Windchill also enables EnerSys to reuse testing and verification processes across different product families for faster, more accurate quality checks.

Additionally, EnerSys can adhere to local compliance requirements faster. For example, if there are local fire safety testing requirements, they can adjust cycles of when to perform complete compliance checks to ensure it's happening at the right time. If a problem occurs in the field, enhanced traceability enables them to investigate the cause and prevent any more issues in the future.

EnerSys's digital transformation journey doesn't end there

EnerSys's journey isn't over. The cost, time to market, and quality improvements they've realized are significant, but they still have work to do. In addition to completing their current digital transformation initiative, they're also looking at implementing other innovative technologies in partnership with PTC.

EnerSys is exploring the use of Internet of Things (IoT) technology throughout their operations, fueled by PTC's ThingWorx IIoT Platform. They have one pilot program in flight with ThingWorx and ThingWorx Kepware Server being implemented in an operational environment. They've connected machines to extract data and enhance asset visibility. And this is just the beginning. In conjunction with Windchill, ThingWorx will help EnerSys fuel continuous improvements. EnerSys is excited to work with PTC to power any innovation that comes next, in any corner of the world.