KAWASAKI HEAVY INDUSTRIES

Providing a Service Platform Across the Enterprise with Aras PLM to Streamline New Product Development Process

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> Yutaro Mishima
> Information Planning Department, KHI

Kawasaki Heavy Industries Ltd. (KHI), a premiere manufacturer of equipment for the aerospace, energy, industrial equipment, power, rolling stock and shipping industries, uses Aras PLM as a unified service platform to streamline new product development and optimize costs.

Kawasaki Heavy Industries, Ltd. (KHI - http://global.kawasaki.com/) is a leading manufacturer of equipment for the aerospace, energy, industrial equipment, power, transportation and shipping industries. With 34 thousand employees on six continents and over $13 billion in annual revenue, the company serves a global customer base in dynamically changing markets. The KHI aerospace division designs and manufactures products ranging from aircraft to satellites.

PLM Selection Criteria

▸ Flexibility to enable easy customization

▸ Platform resilience and upgradeability

▸ Lower initial and operating costs

The transportation division delivers the Shinkansen and New York subway cars, while the ship and offshore division of industrial products range from gas carriers and large tankers to advanced submarines. KHI's world-leading energy solutions division provides global markets with development and manufacture of energy equipment to management systems. KHI is also active in high-level engineering technologies including environmental and recycling plants, industrial plants, precision machinery, industrial robots, and infrastructure equipment.

Finally, in the consumer products segment, KHI produces industry-leading leisure and power products such as motorcycles, watercraft, all-terrain and other vehicles under the Kawasaki brand. With such a diverse environment worldwide, Kawasaki's Corporate Planning Division is tasked with a difficult challenge to help achieve improvements both within and across the different companies.

Product Development Process Challenges

With design, development and production processes in each of the industrial segments, KHI recognizes the importance of working as efficiently as possible in core areas such as CAD data management, document management, design data management, infrastructure system collaboration and other key engineering business areas, and it is a critical issue common to the company as a whole.

Since the introduction of the in-house company system in 2001, KHI encouraged each company to improve management of product information and processes to deliver the innovative, high quality performance products demanded in the industrial markets that it serves. As a result, the product development team in each industrial group has developed its own system for CAD data management, requirements management, and other processes that support the business of engineering, resulting in many different systems in the same process. One significant challenge which was created in this situation was that the company had to respond to design and development requirements unique to each industry segment, while reducing system-related cost as the whole group. Some existing systems became like "a black box" and the organization had to spend more time to respond design and development requirements.

Further adding to the challenge was a lack of real-time communications and collaboration between departments. It was time-consuming to share product information across disciplines. Teams from engineering, quality and supply chain longed for a smart way to communicate about product development. It was evident to the Information Planning Department within KHI that they needed to establish a PLM platform to support the business of engineering company-wide.

In Search of Product Development Agility

To help drive improvements in engineering business processes, the move to a more standardized and unified product development environment was identified. The KHI team began searching for an enterprise-wide platform approach to PLM. The aim was to streamline new product development and

optimize system-related costs within the company's multiple business units as well as the Kawasaki Group as a whole.

"The challenge for our PLM platform was to shorten the implementation period and reduce costs in the whole Kawasaki Group," said Yutaro Mishima, Information Planning Department, Corporate Planning Division of KHI. "The goal was to share process innovations with one another faster and greatly reduce excess charges." As such, the company established three key criteria for the selection of a new PLM platform, including:

- Flexibility to enable easy customization
- Platform resilience and upgradeability
- Lower initial and operating costs

After a thorough search which included evaluation of the major systems from eight different PLM providers, Kawasaki Heavy Industries selected and implemented Aras Innovator® in an in-house Platform-as-a-Service (PaaS) configuration for maximum business agility. KHI chose Aras because it needed a single scalable, flexible PLM platform that would enable the company to respond faster to changes in the business environment and accommodate the unique processes used by the many different KHI business units.

An additional driver to selecting Aras was the need to quickly coordinate systems with lower cost to sustain first-mover advantage in new markets, new products and new businesses.

Getting the Most from Aras PLM

KHI downloaded and installed Aras Innovator directly from the Aras website, then engaged Aras implementation partner ADS Inc. to help transform the KHI vision into reality. "The technical expertise, ability to customize and development of specialized utility tools made ADS an invaluable partner," said Mr. Yutaro Mishima of Kawasaki. "We found the Elysium CAD connectors worked very well to integrate Aras PLM with CATIA."

KHI was also able to perform many of the desired customizations themselves because of the Aras platform's model-based architecture which allows KHI to change the data model, business rules,

workflows, forms and other capabilities without complex programming and compiling. And because customization in Aras is done using modeling techniques instead of complex programming, upgrades are much faster and easier and they don't impact the customizations. In addition, providing Aras as the headquarters' service in a private cloud environment enables KHI to easily support different companies.

"The company head office develops the templates for KHI groups as common infrastructure, then we help deploy it in each company," said Mr. Mishima. "Each company or affiliated organization now can develop their system based on their own purpose and scope of work in a short period of time using the common template which was created at the headquarters."

KHI has already achieved widespread usage of the PLM platform in four companies. 1,000 users are now leveraging Aras PLM for CAD data management, BOM management, document management, sales information management, design data management, infrastructure system collaboration, Visual Collaboration, Self-Service Reporting, Mobile applications on Apple's iOS and more. KHI finds the Aras Visual Collaboration particularly useful to enhance security for its business expansion overseas.

Success Across the Enterprise

KHI is realizing significant benefits with Aras PLM which has made a positive impression on executives and managers across the different companies and departments. When it comes to their primary targeted area of streamlining product development and reducing costs, KHI has far surpassed initial goals. They have achieved better collaboration across the different engineering disciplines, and attained greater efficiencies in processes throughout product development at the companies using Aras. KHI has also accomplished a new level of standardization while also sharing process innovations and improvements between companies.

In addition, there is a company which has reduced the cost for creating a production environment by 51-83%. They can now provide a verification environment to companies in one day at earliest - a task that took

weeks prior to implementing Aras. KHI credits the improvement, in large part, to their ability to be self-sufficient and support the companies with Aras.

As KHI's head office develops more application templates based on Aras PLM, additional KHI global locations will be included. Data collaboration with suppliers and MES integration are in the works. "The possibilities for streamlining both technical and business processes are almost endless with Aras," said Mr. Mishima. "And the fact that the upgrades are included in the Aras subscription and performed by Aras is a significant benefit to us into the future."

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About Aras

Aras® offers the best Product Lifecycle Management (PLM) software for global businesses with complex products and processes. Advanced PLM platform technology makes Aras more scalable, flexible and resilient for the world's largest organizations, and a full set of applications provides complete functionality for companies of all sizes.

By rethinking the way PLM is designed, Aras has taken a fundamentally different approach with a focus on the Business of Engineering. Aras solutions support processes for global product development, systems engineering, multi-site manufacturing, supply chain, quality and more.

Companies running Aras include Airbus, Boeing, Bombardier, GE, Hitachi, Honda, Kawasaki, Magna, Microsoft, Motorola, Nissan, TOSHIBA, Xerox, the U.S. Army and hundreds of others worldwide.

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