

CASE STUDY

# Murata Manufacturing

MURATA STANDARDIZES ON ARAS PLM TO INNOVATE FASTER  
AROUND THE GLOBE

We needed a collaboration platform that had the additional capability of maintaining version control for product configurations that involved thousands of parts and relationships.

Tohru Kamita, Senior IT Specialist, Murata Manufacturing

### **BUSINESS CHALLENGES:**

- Integrate newly-acquired businesses faster
- Streamline collaboration between multiple design and manufacturing locations
- Optimize customer response times in fast-changing markets
- Gain PLM flexibility to enable a range of growth initiatives

### **ABOUT MURATA**

Murata Manufacturing Co., Ltd. is a worldwide leader in the design, manufacture, and sale of ceramic-based passive electronic components & solutions, communication modules, and power supply modules. Murata is committed to the development of advanced electronic materials and leading edge, multi-functional, high-density modules. The company has employees and manufacturing facilities throughout the world and services customers with a global network of manufacturing facilities. Murata innovations can be found in a wide range of applications from mobile phones to home appliances, and automotive applications to energy management systems and healthcare devices.

For more information, visit Murata's website at [www.murata.com](http://www.murata.com)

### **THE NEED TO UNIFY GLOBAL PRODUCT DEVELOPMENT**

Over the past decade, Murata has greatly expanded its business via organic growth and a focus on strategic mergers and acquisitions. Most recently, the company's M&A activities have targeted global growth initiatives that both expand the customer base and the markets in which Murata competes. In addition to communication modules, Murata's main market, the company is broadening its market reach to include parts, modules, and solutions for the Automotive, Energy, and Healthcare sectors. As a result, Murata has a broad diversity of product development processes and collaboration mechanisms that exist across its numerous design and manufacturing facilities around the world.

The major challenge that Murata faced was to perform product development processes faster and more efficiently in an environment characterized by high levels of product and process complexity. "We needed to streamline collaboration within and between design and manufacturing locations," stated Shuichi Itakura, Murata's Manager of the CAD/CAE engineering department. "That was the only way to ensure fast response to customer demands in highly competitive and fast-moving markets."

Unfortunately, Murata's legacy PLM system could not provide the scalability and flexibility to handle complicated and diverse workflows that varied greatly between Murata's different locations. "Our existing PLM system was too rigid," explained Tohru Kamita, Senior IT Specialist at Murata. "We needed to support different processes at newly acquired companies and integrate them into our global workflows, and our PLM system simply could not do so."

## **BENEFITS FROM USING ARAS INNOVATOR:**

- Established a flexible PLM system to incorporate any new process
- Streamlined collaboration between design and manufacturing worldwide
- Integrate acquisitions faster
- Retain engineering staff from acquired businesses

On top of poor scalability and rigidity of the existing PLM system, it was also unable to manage product configurations for increasingly complex products. "A lot of product information must be tracked when designing, developing, and manufacturing substrates," added Mr. Kamita. "We needed a collaboration platform that had the additional capability of maintaining version control for product configurations that involved thousands of parts and relationships."

With their existing PLM system unable to adjust to new and complex demands from the business, Murata managed unique customer requests by customizing their manufacturing operations. "We were happy to serve our customers well, but this method slowed us down and left a gap in our collaboration between the design and manufacturing teams," said Mr. Itakura.

To streamline global design and manufacturing collaboration, Murata searched for a new PLM platform. It would be the only way for the company to perform efficiently while succeeding at its many global product initiatives.

## **THE SELECTION OF ARAS INNOVATOR**

As Murata evaluated newer PLM platforms, the company remained focused on the ability to efficiently manage workflow diversity and complex product information — at scale. "The right PLM platform would enable us to streamline collaboration between design and manufacturing locations, including the ability to easily and securely communicate product design and specification changes in line with evolving customer needs," said Mr. Kamita. As such, Murata's IT team established a set of criteria for the ideal PLM system with 10 critical elements, including:

1. Robust response capability for change
2. Flexible permission settings
3. Strong PLM functionality, such as configuration management, engineering change management, multi-level BOM, document management, visualization, etc.
4. Fast system implementation and extension
5. Application flexibility to accommodate different end-user scenarios
6. Customization capabilities without involvement of developers
7. User access management and end-to-end security
8. Management of product and specification changes across geographies and new locations via engineering change notices
9. Flexible subscription model for low cost of ownership
10. Proven scalability in manufacturing and product industries

To find the right PLM platform, Murata evaluated solution providers based on their ability to solve the 10 identified challenge areas. In the end, only Aras Innovator provided the system capabilities to handle all 10 criteria. According to Mr. Itakura, “Aras Innovator was the only PLM system that could easily adapt to the varying product management workflows we required PLM to support, and its rich response capabilities far surpassed that of other PLM

## **INCREMENTAL GAINS ADD UP TO SIGNIFICANT EFFICIENCIES**

Murata decided that the flexibility of Aras would allow the manufacturer to implement various pieces of Aras functionality over time. With such a phased approach to implementation, the Murata IT team could prove the value of the new PLM platform via specific, successful use cases. “This would optimize end-user acceptance of the new PLM platform,” said Mr. Itakura. To ensure success, Murata closely followed the below 5-phase implementation plan:

Phase1: Part specifications management of power supply products

Phase2: Product specifications management of power supply products

Phase3: BOM and Part database management of power supply products

Phase4: Part specifications management of additional module products

Phase5: BOM and Part database management of a wide range of module products

- PLM: Aras Innovator
- CAD: NX, SolidWorks, Zuken CR-5000 and CR-8000
- ERP: In-house
- Customized Processes: Specification management; EBOM management; MBOM management; Configuration management; Interdepartmental Collaboration (R&D and Manufacturing)
- Users: 500, expanding to 2,000
- Number of Global Locations: 6, expanding to 10
- Departments: Product Development and Manufacturing
- Content Unified in Aras: 4,500 products; 80,000 parts; 230,000 documents

Murata installed Aras Innovator in less than two months, then engaged Aras implementation partner SCSK Corporation to both provide implementation support of Aras applications and manage the subscription contract. "SCSK knew the Aras platform very well and quickly demonstrated their flexibility through rapid Phase 1 implementation," said Mr. Kamita. SCSK made it easy for the General Manager of Murata Power Supply Products to quickly understand the system and spread the word to end users for faster system adoption.

In just 3 months, 6 different Murata power supply design and manufacturing locations around the world were benefitting from a unified system of collaboration that included the following: product specifications management, part specifications management, part database management, and BOM and approval workflows. The document management and BOM management functions are taking place in a heavily customized environment tailored to Murata's unique ways of doing business. "Every location has been able to keep its unique workflows while collaborating across the enterprise," said Mr. Kamita. "Even more impressive is that this is all happening in a multi-CAD environment that includes Zuken CR-5000 and CR-8000, SolidWorks, and NX. Today, the Aras PLM system supports 500 users across 6 different locations who collaborate around 4,500 different complex products, 80,000 parts, and 230,000 documents.

**"Aras Innovator was the only PLM system that could easily adapt to the varying product management workflows we required PLM to support, and its rich response capabilities far surpassed that of other PLM solutions."**

Shuichi Itakura Manager of the CAD/CAE engineering department, Murata Manufacturing

In terms of efficiency and an enhanced ability to respond rapidly to customer and market demands. First, with product information and workflow processes all residing in Aras Innovator, Murata now efficiently manages product configurations, baselines, and work-in-process information without errors, omissions, or duplications. Second, the company has unified all processes in a way that provides collaboration in a unified mechanism while maintaining the best practices at each location.

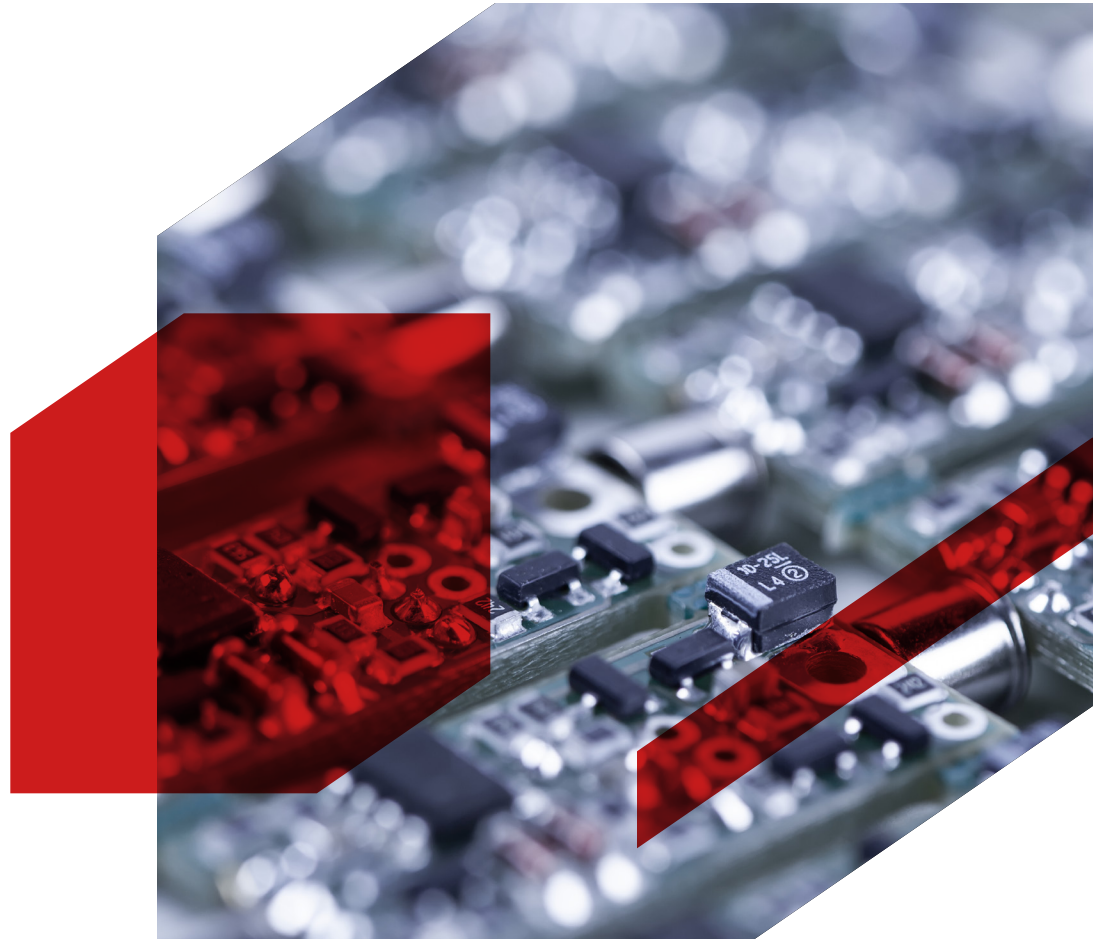
When one location requires new properties or workflow steps, the IT team simply adds them into the system the same day, and the change becomes propagated to all users in real time. “This makes Murata incredibly responsive to new customer requirements,” said Mr. Itakura. “By improving our internal product development collaboration, we gain a natural benefit in customer service.” This has enabled Murata to win multiple new business contracts, especially in the area of custom manufacturing on demand.

## **MURATA ACQUIRES AND QUICKLY INTEGRATES SONY GROUP'S BATTERY BUSINESS WITH ARAS**

Due to the extreme flexibility of Aras Innovator, Murata successfully integrated product design and development processes of Sony's battery unit into Murata's global PLM system. For Murata's 2017 acquisition of Sony Group's battery business, a requirement was to replace the existing PLM system at the Sony unit with Aras Innovator. So, a team from Murata's CAD/CAE engineering department surveyed Sony's engineers to identify the processes and workflows they valued and wanted to incorporate into the Aras PLM system at Murata. A few months later, Murata completed the first PLM system release on Aras Innovator. Full implementation of the PLM system followed shortly after that, with the entire process taking in a quite short period. “Integrating acquired businesses into Murata is now much easier because of Aras PLM's flexibility,” said Mr. Itakura. “Engineers from the acquired business feel comfortable as part of the Murata team, because they can continue to innovate the way they always have.”

## **THE FUTURE FOR PLM AT MURATA**

Murata wants to build on the positive momentum and success that Aras Innovator has brought to global product development. As such, they are already establishing plans to use Aras Innovator as the global product development environment for several additional Murata business lines, including communication modules, automotive, energy, and healthcare.



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