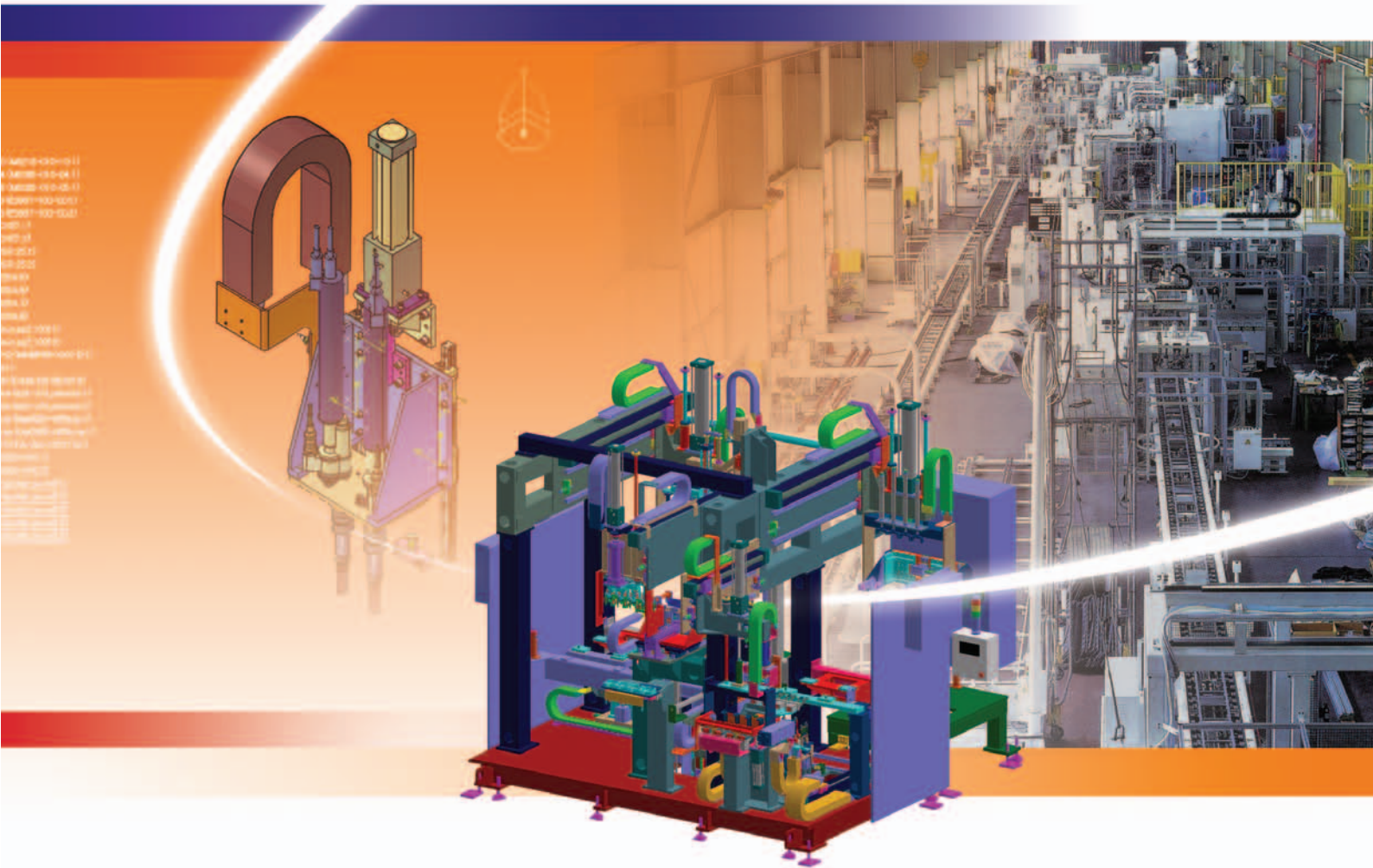
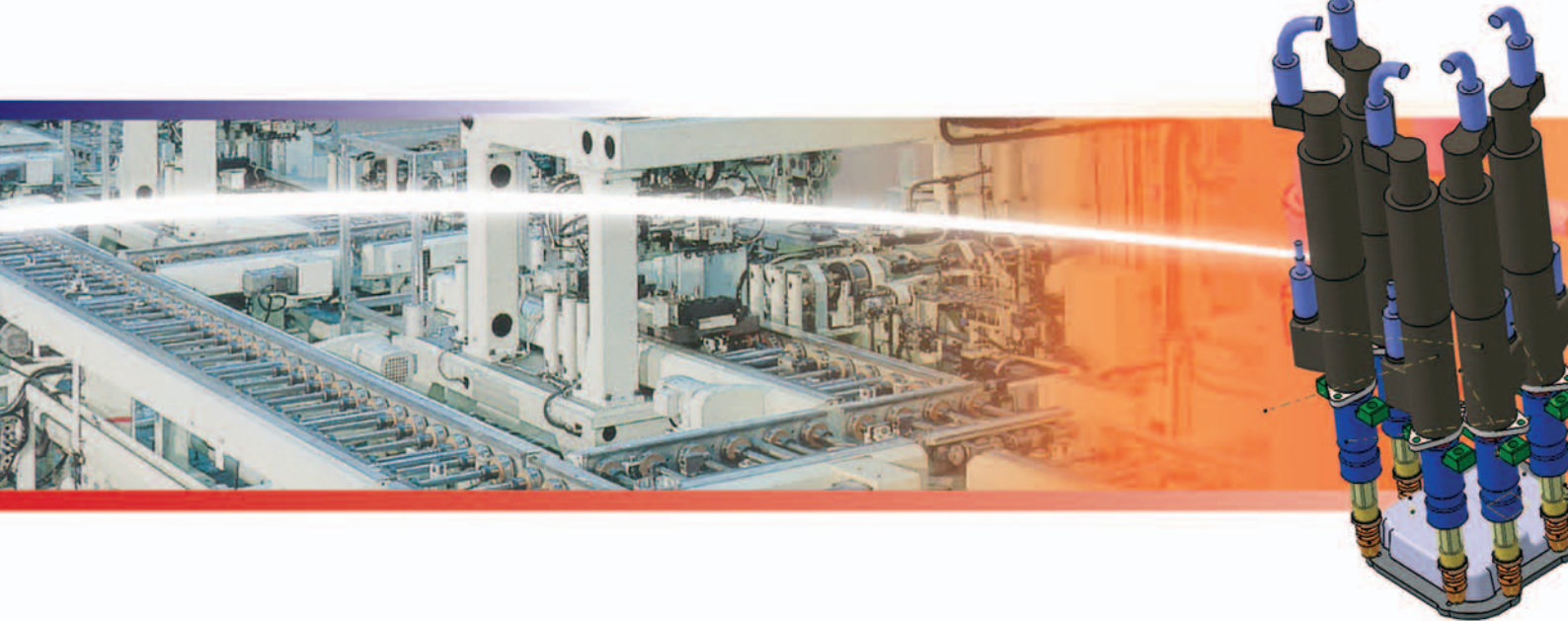


SANYO MACHINE WORKS

Manufacturing excellence with V5 PLM solutions





Sanyo Machine Works Objectives

- Offer more innovative products for greater competitiveness**
- Bring added value and expertise to customers**
- Enhance product quality and delivery time while controlling costs**



“We continually take on new challenges. Our objective is to master, before our rivals, the concepts and technologies that become the standards of tomorrow.”

Keita Horiba, Managing Director,
Sanyo Machine Works

Company Overview

Sanyo Machine Works is a leading provider of industrial automation systems. With 500 employees, its main activity is the design, manufacture, and sale of automated assembly and welding line systems for the automotive and consumer electronic markets.

The company has a worldwide presence, with its headquarters and plants in Japan, as well as production sites in the USA and Canada. Well-known Sanyo Machine Works Japanese customers include Honda Motor, Isuzu, Mazda, Matsushita, Mitsubishi Electric, Nissan Motor, and Toyota Motor Corporation.

Sanyo Machine Works also has international customers like General Motors, DaimlerChrysler and Ford.

Business Challenges

As a supplier in the highly competitive and rapidly changing automotive and consumer electronic markets, Sanyo Machine Works faces unique business challenges to provide its customers with superior manufacturing solutions.

To maintain its position as a market leader, Sanyo Machine Works must make innovation a key differentiator in its solutions.

It must also distinguish itself from other suppliers by not only responding to customer demand with high-quality products, but by proactively exceeding expectations with added-value proposals and expertise.

Finally, to remain profitable and competitive, Sanyo Machine Works must constantly look for ways to improve product quality, while reducing costs and delivery time.



Solution

Determined to address these industry challenges, Sanyo Machine Works launched a corporate project in 2002 based on Dassault Systèmes Version 5 Product Lifecycle Management (V5 PLM) solutions including CATIA V5, SMARTEAM and DELMIA.

“We named this project Sanyo machine Digital Innovation, Initiative, Integration, or SDI³,” said Keita Horiba, managing director, Sanyo Machine Works. “Supported by V5 PLM solutions, the project is key to maintaining the pre-eminence of Sanyo Machine Works technology, which will be essential for future business growth.”

CATIA V5 fosters innovation

CATIA V5’s ergonomic and intuitive user interface enables Sanyo Machine Works engineers to concentrate on their designs and not on the tool. This permits them to explore more design alternatives and unleash their creativity. Moreover, as a collaborative 3D-based system, CATIA V5 enables designers to use 3D as a language and share ideas among development team. Thanks to CATIA V5, this synergy facilitates brainstorming and fosters innovation.

DELMIA drives innovation

Sanyo Machine Works can load the 3D design data from CATIA V5 within DELMIA in order to simulate manufacturing processes in a virtual factory. This permits validation of equipment layout, robot reachability, cycle times, and ergonomic factors such as worker posture. These analyses enable Sanyo Machine Works to propose high-performance, added-value solutions that distinguish the company from its competitors.

SMARTEAM manages integration

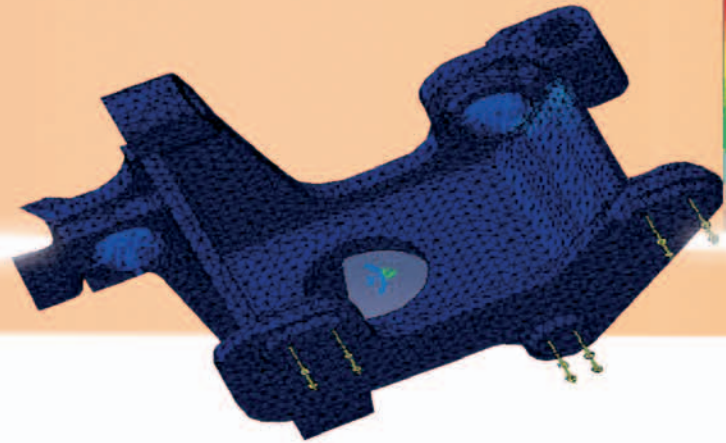
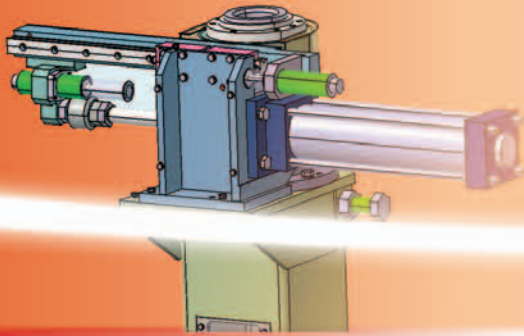
SMARTEAM is key to Sanyo Machine Works’ SDI³ project due to its powerful integration capabilities. Through SMARTEAM, Sanyo Machine Works links its product definitions and analysis in CATIA V5 with manufacturing simulations in DELMIA, connects its PLM data to ERP system, and exchanges data across its extended enterprise with its suppliers and with customers.



“Sanyo Machine Works measures the true value of a full V5 PLM deployment when we take the 3D design data from CATIA V5 and use it in the manufacturing process, using DELMIA.”

Kenji Kozakai, General Manager,
Information Technologies Department,
Sanyo Machine Works





“Regarding design quality, we have achieved remarkable results. Errors found at the final assembly stage have decreased by 30 to 40%. In addition, we can respect increasingly severe customer demands to cut lead-time.”

Satoshi Yasuda, Manager,
Mechanical Engineering Department,
Sanyo Machine Works

Results

Reduced lead time

CATIA V5's associativity mechanisms and knowledge-based infrastructure enable Sanyo Machine Works to begin designing an assembly line before the OEM has finished defining the product itself. This synchronous rather than sequential engineering process dramatically reduces lead time at Sanyo Machine Works.

Superior design quality

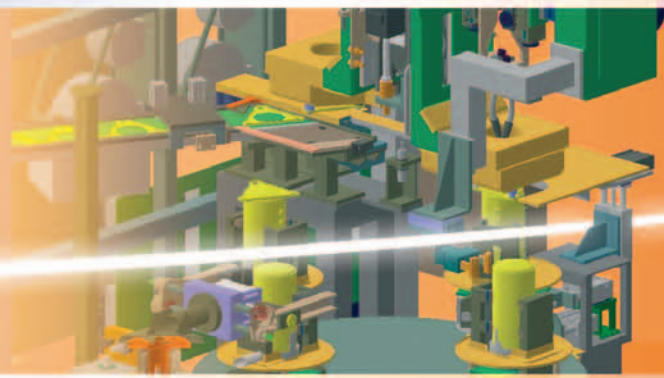
CATIA V5 has enabled Sanyo Machine Works to significantly improve the quality of its product designs. The precision of its digital designs has resulted a 30 to 40% reduction in the number of errors found at the final assembly stage.

Shorter development time

For development of the pallet sub-structure of its assembly lines, Sanyo Machine Works loads CATIA V5 mechanical assemblies into DELMIA to simulate the manufacturing process. As a result, Sanyo Machine Works no longer builds prototypes of its assembly lines pallets, and consequently has halved overall pallet development time from eight to four weeks.

Fewer parts

Previously, it was difficult for Sanyo Machine Works engineers using 2D drawings to detect design collisions and to quickly perform the verification process. With CATIA V5, the process can be abbreviated, which greatly contributes to reduce pallet design times. Using CATIA V5, Sanyo Machine Works designers have optimized design which has lead to a 25% reduction in the number of parts.



Streamlined manufacturing

Thanks to CATIA V5 knowledgware capabilities, Sanyo Machine Works is able to capture product definitions, related data, and best practices. Later, the company reuses and shares this knowledge to significantly reduce the development time of new projects. It has also enabled Sanyo Machine Works to reduce pallet manufacturing time by an outstanding 60%.

Improved collaborative environment

3D has become an important communications means for Sanyo Machine Works that fosters collaboration within its extended enterprise.

“Providing a 3D digital view really improves communication with customers,” said Kenji Kozakai. “When we discuss the design of an assembly line, we are able to get a clear understanding of what the customer wants. This improves collaboration and accelerates design validation.”

Increased business performance

Sanyo Machine Works has improved its business performance in a number of different ways with Dassault Systèmes V5 PLM solutions. For example, the company has increased its competitive advantage by adopting CATIA V5, the de facto 3D design standard in the automotive industry.

“The ability to handle 3D data in-house using CATIA V5 is a key to success in the automotive industry,” said Horiba. “Exchanging 3D data is considered as a prerequisite and it was a major factor in our winning of a number of contracts.”

V5 PLM Key Benefits*

-50%

Overall development time

Elimination of physical prototypes halved overall pallet development time from eight to four weeks

-25%

Number of parts

3D visualization facilitates pallet design optimization and validation

-40%

Errors found at the final assembly stage

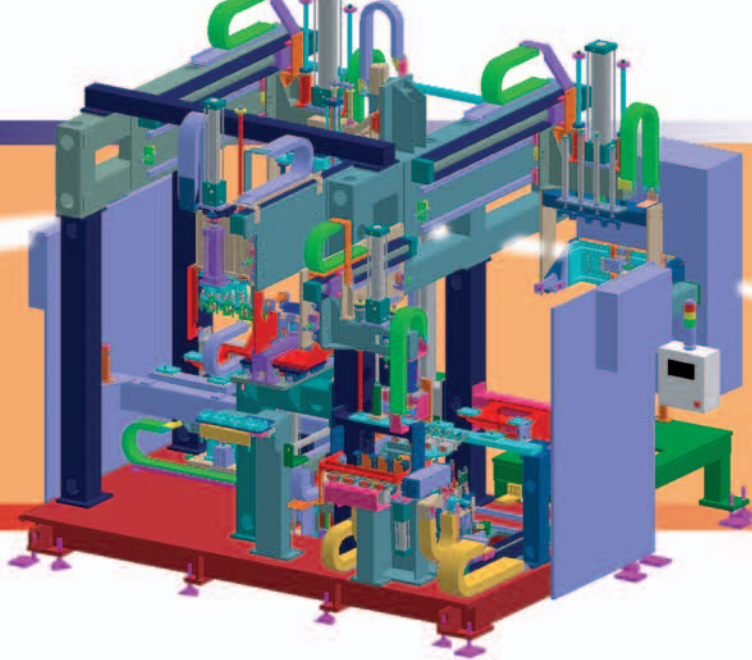
CATIA V5, DELMIA and SMARTTEAM improve design quality

-60%

Pallet manufacturing time

Capture and reuse of pallet design cuts manufacturing time

* figures based on results for pallet design



Future

Sanyo Machine Works plans to use SMARTEAM to quickly and easily exchange all data related to the development of products, such as its manufacturing processes and related resources.

Sanyo Machine Works also plans to use SMARTEAM as an internal communications tool among all departments within the company to enable manufacturing, procurement and sales departments to visualize the 3D digital mock-up (DMU) of an assembly line through an easy-to-use browser.

Moreover, Sanyo Machine Works will add the ENOVIA DMU product suite to its V5 PLM platform to strengthen virtual review of designs and thus further enhance collaboration among departments.

Finally, Sanyo Machine Works has started to implement Generative Tooling Solutions. These specialized V5 PLM Industry Solutions will enable the company to further reduce tooling design time and cost while improve tooling quality through a generative approach. This approach makes it possible for manufacturers and suppliers to improve design productivity by building on embedded experience from existing designs. Designers can easily 'copy' previously validated engineering rules and tooling definitions to automatically create new designs or modifications of a new product and its associated manufacturing processes. The Generative Tooling Solutions are a perfect match for Sanyo Machine Works and its product-engineering philosophy of "always new."

"SMARTEAM enables us to share data with our customers and affiliates, and work together in close cooperation, which allows effective engineering collaboration."

Kenji Kozakai, General Manager,
IT department, Sanyo Machine Works

"Introducing V5 PLM solutions has given us a technical advantage over our rivals and helped us to become more competitive through innovative product development. We have given this project top priority."

Keita Horiba, Managing Director,
Sanyo Machine Works



Conclusion

Dassault Systèmes V5 PLM Solutions have permitted Sanyo Machine Works to build a ground-breaking 3D digital manufacturing environment. Through the SDI³ project and V5 PLM technology, Sanyo Machine Works can realize its objective of “remaining one step ahead of the industry.”

V5 PLM for the Fabrication & Assembly Industry

Dassault Systèmes has been working with major Fabrication & Assembly (F&A) manufacturers and suppliers for more than 20 years to provide a range of leading PLM solutions.

DS V5 PLM solutions cover the product development needs of F&A industries such as machinery manufacturing for industry, construction, mining, paper,

printing, textiles, the industrial equipment sector and other specialized production and process domains. CATIA V5, ENOVIA, DELMIA and SMARTEAM enable F&A manufacturers to remain competitive by increasing innovation, reusing company knowledge and part design, standardizing processes, ensuring quality, increasing flexibility, and reducing product development costs.

For information about DS V5 PLM solutions for F&A industries, visit www.3ds.com

The Dassault Systèmes home page can be found at www.3ds.com

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As world leader in 3D and in PLM (Product Lifecycle Management) solutions, the Dassault Systèmes group brings value to more than 80,000 customers in 80 countries. A pioneer in the 3D software market since 1981, Dassault Systèmes develops and markets PLM application software and services that support industrial processes and provide a 3D vision of the entire life cycle of products from conception to retirement.

Dassault Systèmes V5 PLM offering includes integrated solutions: CATIA, DELMIA, ENOVIA and SMARTEAM. CATIA® is a registered trademark of Dassault Systèmes.

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