SIEMENS
Ingenuity for life

ASM Pacific Technology

Semiconductor and LED equipment supplier uses NX to achieve goal of building smart factories

Product

NX

Business challenges

Directly apply 3D product models to production/ manufacturing activities

Capture design intent/consent without disconnecting design from manufacturing

Transfer product design changes from the product development center to manufacturing

Keys to success

Use NX CAM feature-based machining capability to read and identify PMI attached to 3D product models

NX CAM integrated simulation and verification capability, ensuring one-time machining success rate in real machining processes

Siemens PLM Software solutions enable ASM Pacific Technology Ltd. to improve production efficiency and quality by 70 percent

Looking for solutions to keep pace with advancements in electronics technology
ASM Pacific Technology Ltd. (ASM) is the world's largest supplier of semiconductor and light-emitting diode (LED) manufacturing and assembly equipment. ASM specializes in providing LED

manufacturing and assembly equipment for chip manufacturers, integrated circuit (IC) manufacturing and assembly factories, and consumer electronics manufacturers. With the acceleration of electronics technology advancements, upstream manufacturing equipment providers are tasked with producing more sophisticated equipment in shorter cycle times.

As the industry leader, ASM places high value on product development and production, investing 10 percent of its

www.siemens.com/plm
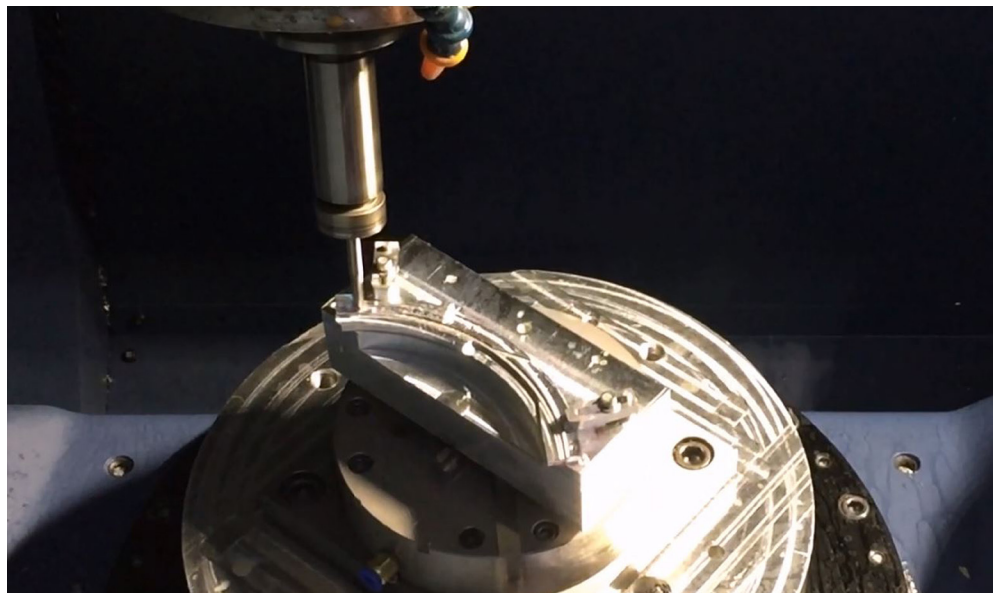
Results

Improved ASM's production efficiency and quality by 70 percent

Established a machining programming process

Realized smart identification of machining features

Standardized machining process rules and automated creation of tool paths

Improved accuracy and reliability of NC programming

Achieved seamless connection between computer-aided design and computer-aided manufacturing

"NX CAM's feature-based machining enables us to truly experience the seamless connection between CAD and CAM, enabling manufacturing to respond more quickly to design changes, thus significantly reducing the time of responding to user requirements and reducing time-to-market."

Hu Dewen
Senior CAD/CAM
Manufacturing Manager
ASM
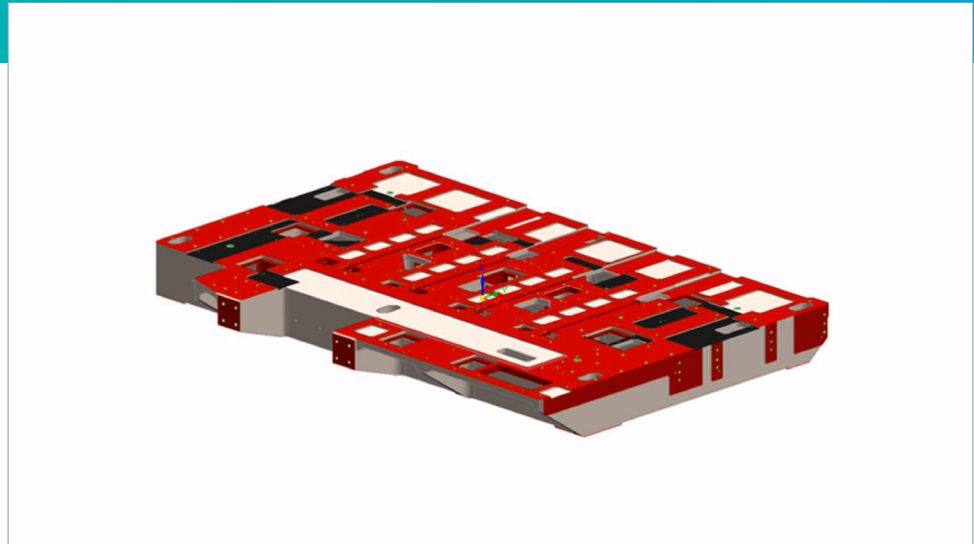
yearly sales revenues into product development. But the system and geographical separations between its research and development centers and manufacturing factories (each with locations throughout Asia and Europe) created significant gaps between ASM's design, development and production activities.

**Overcoming challenges using NX CAM**
Directly applying three-dimensional (3D) product models to production/manufacturing activities proved difficult

because the models lacked complete product information. Also, it was impossible for the manufacturing processes adopted by the factories to capture design intent, making it difficult for product data to flow between computer-aided design (CAD) and computer-aided manufacturing (CAM).

Because of the significant time required to transfer design changes from the product development center to manufacturing,

"Our statistical results show that feature-based machining and PMI have improved the producing efficiency and quality of ASM by 70 percent, thus saving a lot of valuable time."

Hu Dewen
Senior CAD/CAM Manufacturing Manager
ASM
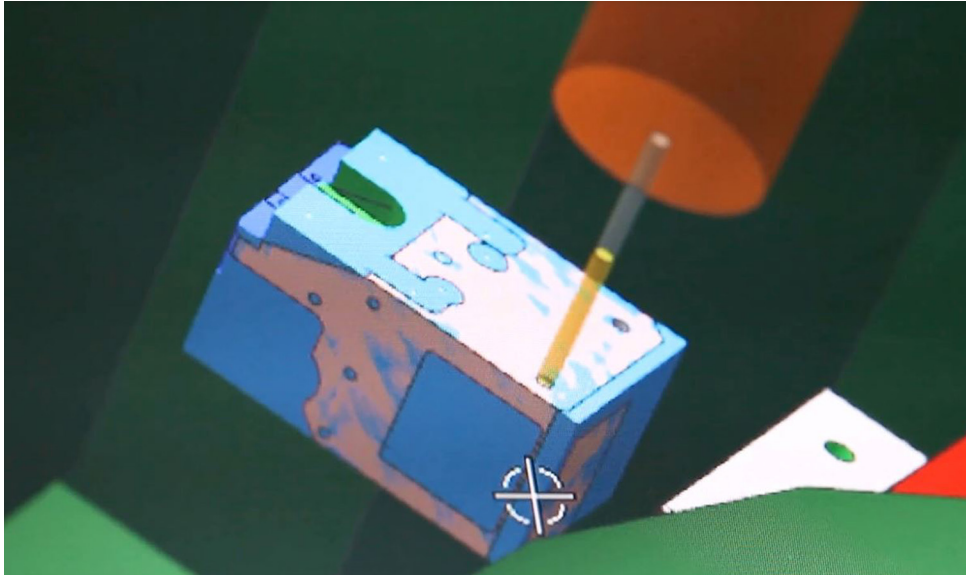
ASM realized it needed to integrate CAD and CAM. The full integration of design and manufacturing could eliminate problems associated with design and production automation and efficiency, while supporting an upgrade of the company's business and processes.

"Product development and production are the core parts of ASM," says Chen Lizhi, director of ASM MIS information and telecommunications technology. "ASM invests 10 percent of sales in product development activities. We have several product development centers and manufacturing factories around the globe. In order to thoroughly eliminate the seamless connection problems in linking design and production, we decided to deploy a computerized system at the production/ manufacturing stage, using NX as the standard parts machining software platform to deploy the computerized system uniformly.

"We began using NX CAM software from Siemens PLM Software in manufacturing factories in 2000. We have deployed more than 100 suites in factories all over the world, including those in Shenzhen, Singapore and Malaysia." Successful digitalization has pushed productivity to a new level.

FBM keys more efficient processes
The most immediate benefit of applying NX™ is that its feature-based machining (FBM) capability eliminates the data barriers between design and manufacturing. With FBM technology, NX CAM can automatically read and identify product and manufacturing information (PMI), tolerances, surface machining precision, and

"We began using NX™ CAM from Siemens PLM Software in manufacturing factories in 2000. We have deployed more than 100 suites in factories all over the world, including those in Shenzhen, Singapore and Malaysia."

Chen Lizhi
Director MIS Information and Telecommunication Technology
ASM

Solutions/Services

NX CAM
www.plm.automation.
siemens.com/en/products/nx/
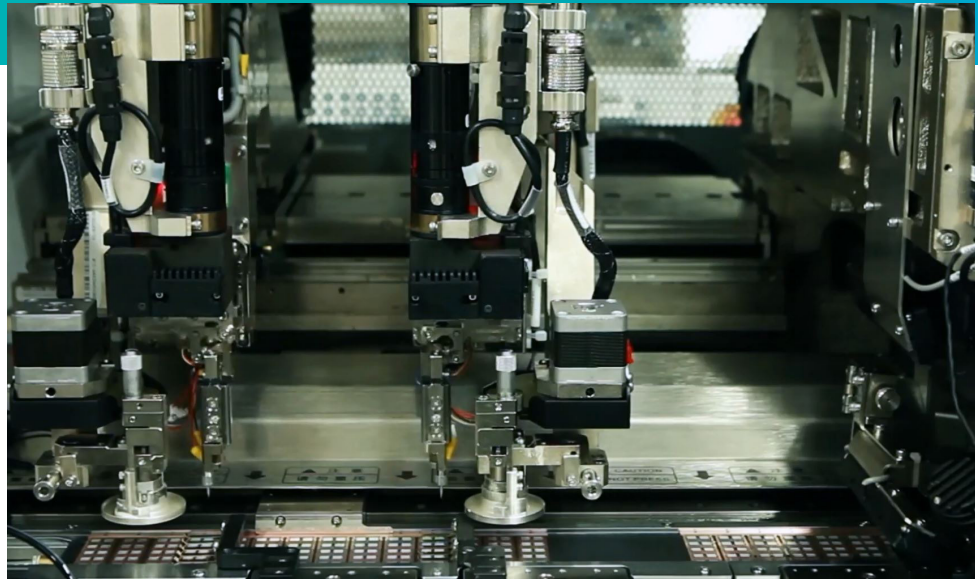for-manufacturing/cam/

Customer's primary business

Founded in 1975, ASM Pacific Technology Ltd. provides semiconductor and LED manufacturing equipment for global chip manufacturers, IC manufacturing/assembly factories and consumer electronics manufacturers.

www.asmpacific.com/en/

Customer location

Shenzhen
China

other information attached to 3D product models, and automatically select machining methods, processes and tools while also directly driving numerical control (NC) programming and machining.

In addition, feature-based machining enables automatic transfer of related data between CAD and CAM, and automatically identifies features and creates standardized NC programs for machining processes. ASM can now minimize human error while maximizing efficiency and accuracy.

Meanwhile, with the NX CAM integrated simulation and verification (ISV) capability, significantly reducing programming errors and improving machining quality. ASM's engineers no longer need to conduct tests on physical machine tools. Instead, they can check the NC programming of tool paths for accuracy and reliability in a virtual environment, and verify the tool path and material removal process in a 3D environment. Machine tool simulation driven by G-code drives the true movement of the machine tool's 3D model (including

fixtures and tools), thus ensuring the first-time success of machining in the real world.

With more advanced machining and manufacturing technologies, ASM is marching toward the goal of building smart factories.

"NX CAM's feature-based machining enables us to truly experience the seamless connection between CAD and CAM, enabling manufacturing to respond more quickly to design changes, thus significantly reducing the time of responding to user requirements and reducing time-to-market," says Hu Dewen, senior CAD/CAM manufacturing manager at ASM. "Our statistical results show that feature-based machining and PMI have improved the production efficiency and quality of ASM by 70 percent, thus saving a lot of valuable time."