

Electronics and semiconductor

Ricoh

Ricoh reduces time and costs, and creates more refined designs with 3D modeling

Product

Solid Edge

Business challenges

Need to transition from 2D to 3D design rapidly and with minimum disruption

Need to reduce design and prototype costs to maintain competitive market position

Keys to success

Use of user-friendly Solid Edge software as 3D CAD

Utilize Solid Edge with Insight design management tools to stimulate collaboration

Capitalize on Solid Edge integration and associativity with various simulation tools

Results

Effectively and rapidly moved to 3D design

Greater collaboration with manufacturing and service divisions

Improved refinement of prototypes

Solid Edge helps Ricoh ease the move to 3D design

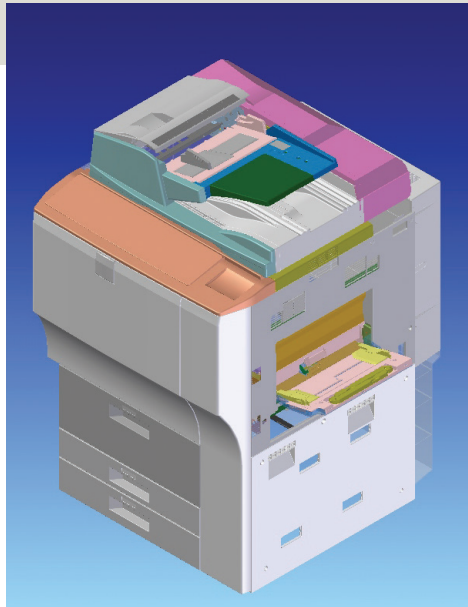
In January 2005, Ricoh released its top-of-the-line digital color multifunctional printer. Ricoh actively improved the efficiency and sophistication of its design through the use of Solid Edge® software.

Migration to Solid Edge for 3D CAD

In January 2005, Ricoh launched the "Imagio Neo C600" series, its latest line of digital color multifunctional printers. This product includes a large number of

leading-edge technologies, including Ricoh's unique four inline tandem drum print engine, machine-internal humidity control device and intermediate copy feedback control enabling more sophisticated fast rotation control. Its features include high-speed two-sided or single-sided printing of 45 pages per minute for color and 60 pages per minute for monochrome, as well as 600 dpi/256 gradation high-resolution printing and faster, higher quality scanning than previous models. It is highly popular with customers who need a top-of-the-line model.





The Solid Edge 3D CAD solution from Siemens PLM Software was used in the internal design of the C600 series, from the conceptual stage to the detailed design. The unit's external appearance was designed in NX™ software, Siemens PLM Software's next-generation digital product development system.

"Ricoh began using Solid Edge for design in May 2000," recalls Etsuro Kuretani, R and D Engineer, 3D Engineering Innovation Department, MFP Business Group, Ricoh Company Ltd. According to Kuretani, the Company used another 3D CAD tool prior to 2000, but hard-to-use interfaces and other issues prevented

Ricoh from making much headway in the shift to 3D design. Then Ricoh began looking into replacing its 3D CAD tool. In the end, it chose Solid Edge.

According to Mr. Kuretani, the biggest reason for selecting Solid Edge was that it was "user friendly." He says one of the significant features of Solid Edge is its hassle-free shape creation. Additionally, the product simplifies user education, since it can be learned with only simple training. He also points to the sheet metal and 2D drawing features as two points that won the product high marks.

Currently, almost all the designers are using Solid Edge to design new products.

Easy-to-use CAD greatly accelerates shift to 3D design

The migration to Solid Edge for 3D CAD has greatly accelerated Ricoh's shift to 3D design. "Although we were pushing the shift to 3D from the top down, the number of users immediately began to grow spontaneously," says Kuretani.

On the other hand, Kuretani also points to the flexible and cooperative attitude of Siemens as a major factor contributing to the acceptance of Solid Edge at Ricoh. Ricoh made a variety of requests to Siemens to extend the features of Solid Edge, and Siemens actively responded to each of these, adding a variety of new

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Etsuro Kuretani
R and D Engineer
3D Engineering Innovation Department
MFP Business Group,
Ricoh Company Ltd

Solutions/Services

Solid Edge

www.siemens.com/solidedge

Customer's primary business

Founded in 1936, Ricoh is an "image communication" company that develops a wide range of products and offers many services, with a focus on imaging devices, and with top priority placed on continually creating true value from the customer's perspective. In addition to imaging solutions, the company is expanding into network I/O systems and network systems solutions. Ricoh is blazing the trail for the future of business communications, while supporting needs to move to digital and networked devices.
www.ricoh.com

Customer location

Tokyo
Japan

"The biggest reason for selecting Solid Edge was that it was user friendly. It has greatly accelerated the shift to 3D design and reduced product development time and costs."

Etsuro Kuretani
R and D Engineer
3D Engineering Innovation
Department
MFP Business Group,
Ricoh Company Ltd.

features and enhancements to Solid Edge. For example, the virtual component and Zero D feature of Solid Edge Version 16 and the direct editing functionality of Solid Edge Version 17, were born of a joint commitment between Ricoh and Siemens.

What benefits did an accelerated shift to 3D design have? "The biggest benefit was more lively communication among designers," says Kuretani. "With 2D, the designer is often the only person who understands the design; it was difficult for other designers to look at a drawing and point out issues. 3D modeling, however, enables an intuitive grasp of the design. This has allowed designers to exchange views on a day-to-day basis, without setting up special study teams."

It has also become easier for nondesign staff from manufacturing, service and other divisions to give opinions on designs. Checking for issues at the 3D modeling stage that previously could only have been spotted after a prototype was completed were now possible. Issues spotted after the prototype was built have decreased by half, and the number of prototype cycles has also decreased.

The efficiency of the prototypes themselves has improved. Whereas in the past, part prototypes would be ordered after making hard copies of the 2D drawings, currently the 3D data is simply sent as is. It dramatically reduced the designers' work of ordering prototypes. Kuretani says that 3D data has also greatly improved efficiency at the mass-production stage as well as the prototype stage.

Another major benefit of 3D data is the greater accessibility of simulations. Ricoh uses Solid Edge data for structural analysis, vibration analysis, heat analysis, fluid analysis and more. It also uses it for ergonomic analysis via Siemens' Tecnomatix® Jack software, which enables users to position biomechanically accurate digital humans of various sizes in virtual environments, assign them tasks and analyze their performance.

Greater density through reductions in time and cost

"Shifting to 3D design using Solid Edge has reduced the amount of time and cost required for design," says Kuretani. This allows the company to pack design features into products to the very limits, creating products that are more competitive than those of its rivals. Solid Edge also played a major role in the creation of the 'Imagio Neo C600' series, which represents the pinnacle of multifunctional printer design.

In 2003, Ricoh began using Solid Edge in its China-based design shops, in addition to inside Japan. Kuretani says that the common use of Solid Edge for CAD facilitates the exchange of data.

There are also great expectations for the extended functionality of Solid Edge Version 17. "I'm looking forward to taking advantage of the direct editing component feature in my work," says Kuretani. He points out that the direct-modeling feature should speed up design. As Solid Edge continues to grow together with its customers' needs, it should continue to make major contributions to helping Ricoh design more efficiently.

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