

SITUATION

Maintaining market share in a rapidly evolving industry is certainly a critical challenge. Sharp, one of Japan's consumer electronics powerhouses, needed to produce a new design for its Viewcam video camera while at the same time dramatically reduce the development cycle. Time-to-market, quality, and user acceptance were key issues.

Sharp had been designing its products on a 2D CAD system and using drawings to communicate design intent to subsequent operations. While management was aware of the potential of solid modeling, they were concerned about delays in product development due to complex learning curves and a lengthy data conversation process.

OBJECTIVES

- ✓ Create a bold, new design for the Viewcam.
- ✓ To address usability, create a much smaller camera than previous designs.

PROCESS VISION

- ✓ Select 3D software with a reputation for being easy to use—a tool that would not adversely affect the product development time line—a system that would protect the current investment in 2D legacy data.
- ✓ Minimize data transfer difficulties.
- ✓ Adopt a system that also provided solid models as the basis for analysis, rapid prototyping, and mold manufacturing.

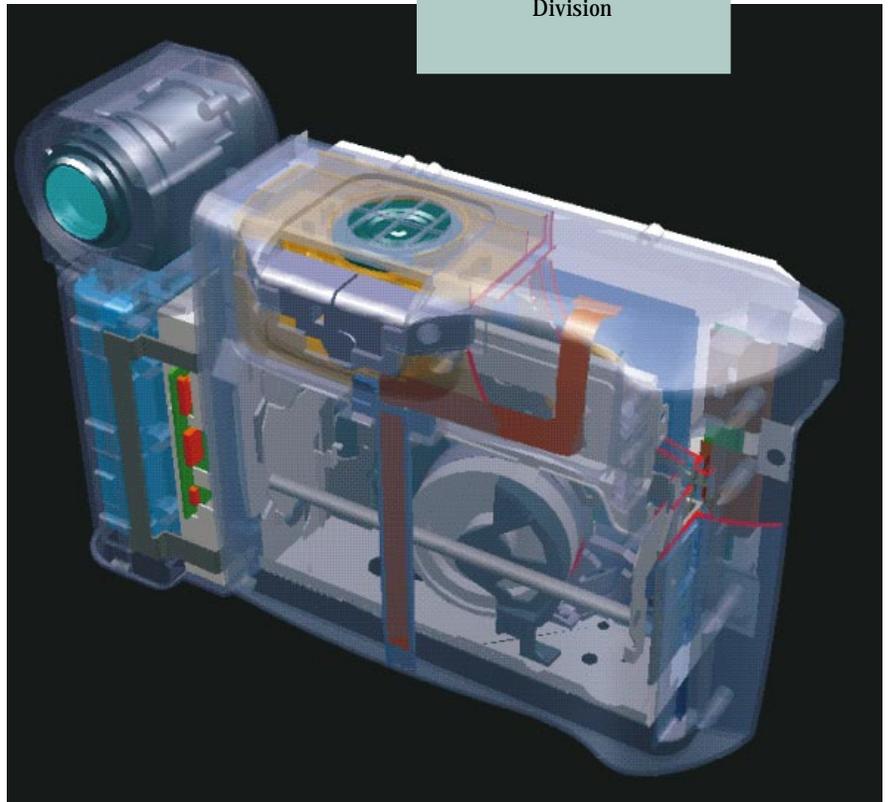
ACTIONS

- ✓ Transitioned from an incumbent 2D CAD system to SDRC I-DEAS Master Series™ software.
- ✓ Converted surface models from Sharp's industrial design system to the IGES format and transferred them to I-DEAS™ software.
- ✓ Created solid models with I-DEAS Master Series and transferred the data to a concurrent work group—the Cabinet Design department—so each group could work with the same modeling system and exchange models without data translation issues.

SHARP HONES ITS EDGE WITH SOLID MODELING

"Sharp reduced unnecessary processes by using the same data from design to molding."

- Hideaki Kato
Manager, CAE Center
Sharp – Product
Engineering Development
Division



SHARP HONES ITS EDGE WITH SOLID MODELING

- ✓ Involved the design groups in the analysis process—a first for Sharp. By moving analysis upstream, Sharp’s intent was to make it feasible for designers to perform quick shock tests of components, a strength analysis of the cassette cover, a deformation check for a cylinder, and a plastic flow analysis of the cabinet prior to final design completion.
- ✓ Utilized solid models to produce rapid prototypes useful as a means for helping designers confirm their designs and for communicating design intent to outside suppliers.
- ✓ Finally, passed the completed solid model directly to the mold maker to produce the NC programs for the molds.

RESULTS

- ✓ Sharp was able to create a strong, new design for the camera which was 30% smaller in size.
- ✓ The development cycle for this new product was reduced by 75%.
- ✓ Substantial time savings were attributed to the ability to incorporate concurrent engineering concepts into the process, establishing a “team engineering” environment.
- ✓ More time savings were attributed to I-DEAS’ feature-based modeling capabilities and the corresponding ability to create libraries of commonly used parts.

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