



# SIEMENS

Siemens PLM Software

# Industry Insights

Accelerate consumer durables design with Solid Edge

At Siemens PLM Software we understand that you need to quickly bring to market the latest in attractive, easy-to-use and reliable products for your customers. Ensuring that these products comply with industry and government regulations is critical, but made easier if you can quickly create both physical and virtual prototypes, and perform comprehensive testing to validate your new designs.

Using Solid Edge® software from Siemens PLM Software enables consumer products manufacturers to speed development and perform virtual testing on designs to ensure that new products meet both customer needs for reliable, easy-to-use devices and the many regulatory requirements that apply in the markets where the products are sold. They can also communicate better with suppliers and manufacturing during product development and production, reducing errors and delays that can prevent getting new products to market successfully. Introducing high-quality, reliable products to the market faster results in increased cash flow and higher profit margins for consumer durables manufacturers.

Using Solid Edge improves product development performance in these key process areas:

#### Communicate innovation and value

Consumer durables manufacturers can significantly improve how they communicate designs to distributors and potential customers during the product development process and after launch, conveying the innovative features and ease-of-use of their designs and getting valuable feedback to fine-tune the final product. Using Solid Edge makes that possible with the creation of 3D product information, including prototypes created using 3D printing, photorealistic images and animations.



#### The Solid Edge advantage:

- Speed design with the simplicity of direct 3D modeling combined with the flexibility and control of parametric design, made possible with synchronous technology
- Rapidly create prototypes for internal validation and customer acceptance testing
- Easily model attractive housings and bodies using Solid Edge surface design capabilities
- Use advanced assembly design techniques for efficient packaging of electro-mechanical components
- Ensure compliance with industry and government regulations with electronic signoffs and secure vaulting

# Solution focus

## The Solid Edge advantage: continued

- Create attractive product images and animations that communicate innovative products to potential customers

## Key solution components

- *Solid Edge design* for 3D part and assembly modeling using synchronous technology accelerates product design, speeds revisions and improves the re-use of proven subassemblies in new designs
- *Solid Edge Simulation* for virtual analysis of products reduces the need to create multiple physical prototypes, lowers material and testing costs and improves reliability and safety
- *Solid Edge manufacturing* for defining accurate machining processes that improve manufacturing efficiency and product quality
- *Solid Edge for design management* improves the overall efficiency of the product development process, and ensures that accurate product data, bills-of-material and compliance documents are easily accessible



## Manage customer and regulatory requirements

Consumer durables need to be developed to meet both customer needs and specifications mandated by regulatory authorities. Using integrated design management capabilities, requirement documents and specifications can be managed as an integral part of the design project.

## Speed 3D design and changes

Designers and engineers are under pressure to work faster as well as produce accurate 3D part models, assemblies and 2D drawings. Solid Edge provides a complete software portfolio that enables you to speed design and help eliminate errors before manufacturing begins. Design changes can be implemented faster so new products can be delivered on time and on budget.

## Design using complex shapes for attractive products

Consumer products often require the creation of aesthetically pleasing shapes, including housings that feature complex surface designs for excellent aesthetics and ergonomics. Solid Edge helps by enabling designers to model complex shapes quickly and accurately, incorporating sketches from industrial designers, and by efficiently packaging components and subassemblies inside these housings.

## Integrate electrical and electronic components

As consumers demand smarter products, the need to house electronic components and route electrical wiring is becoming an increasingly important part of the design process. Using Solid Edge helps by enabling accurate modeling of electronic components, housings, electrical wiring and connectors. Wire routings can be optimized, correct cable lengths calculated and accurate bills-of-material (BOM) created, resulting in more efficient manufacturing and faster time-to-market for new products.

## Develop sheet metal bodies and components

The external body and key structural components of consumer devices, especially domestic appliances, are often made of sheet metal. Solid Edge includes best-in-class capabilities that enable rapid design of these components and provide the ability to create accurate flat patterns to help ensure reliable manufacturing processes.

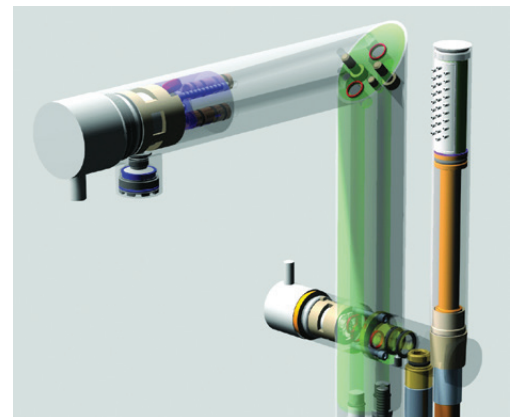


## Prototype and test prior to build

Design engineers may have to wait until a device is built to identify engineering problems. However, by creating 3D models of their products, engineers can investigate different solutions and refine functionality in a virtual environment. Integrated capabilities, including Solid Edge Simulation, facilitate motion and stress analysis, and the result is a significant drop in costs and time-to-delivery as engineers solve problems before manufacturing begins.

## Ensure compliance with industry and government regulations

Significant time and effort may be required for quality assurance and to demonstrate compliance with industry and government regulations. Solid Edge enables you to work efficiently in this area by managing required documentation and automatically creating print files to capture the exact specification of the released design. Electronic workflows ensure a controlled and recorded development process. As a result, you have a proven audit trail and with consistent work practices, a reduced risk of product recalls.



### Manage design projects and engineering change

To develop new products quickly, manufacturers need to retrieve the data they require quickly, optimize their resources and manage engineering changes efficiently. Solid Edge helps by providing visual design management tools that include preconfigured workflow capabilities, enabling your team to easily track design changes and development projects.

### Installation and service

Consumer durables firms need to support their distributors for installation and ongoing service of the equipment they manufacture. Solid Edge can be used to create 3D documents that effectively communicate installation, operation and maintenance procedures, and enable you to accurately manage the bills-of-material so the correct spare parts can be supplied to address in-service issues.

### Achieving real benefits

Manufacturing firms in the consumer durables industry are achieving significant benefits using Solid Edge. Some examples from recently published case studies include:

- Increased design productivity by 50 percent
- Reduced design time for award-winning products
- Increased new product introduction rate by 43 percent
- Reduced product development time by 50 percent
- Cut rework due to inconsistencies by 80 percent
- Improved process reliability and standardization
- Improved marketing capability

For more information on this offering and to read customer case studies, please visit [www.siemens.com/solidedge](http://www.siemens.com/solidedge)



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