

Developing innovative, high-tech products 30 percent faster

Siemens PLM Software technology supports a fully digital process that encompasses the full spectrum of activities from creative design through to manufacturing

SAMSUNG ELECTRONICS CO., LTD.



Siemens PLM Software

www.siemens.com/plm

Business initiatives

- New product development
- Value chain synchronization
- Commonization and re-use
- Knowledge and IP management

Business challenges

- Technology-based value innovation
- Lower costs
- Accelerated development
- Ensuring high quality

Keys to success

- Digital design, validation and manufacturing
- Photorealistic images and virtual reality vs. physical prototypes
- Effective management and reusability of CAD data
- Automated part and assembly validation

Results

- Development cycle reduced by 30 percent
- 30 percent fewer prototypes;
- 50 percent fewer errors in first production runs
- BOM errors down 95 percent
- 19 percent fewer mold corrections; developed cell phone molds in only 10 days

Leading the digital convergence revolution

Samsung Electronics Co., Ltd. is a global leader in semiconductor, telecommunication, digital media and digital convergence technologies. Employing approximately 138,000 people in 124 offices in 56 countries, the company consists of five main business operations comprised of 13 business units: Digital Media Business, LCD Business, Semiconductor Business, Telecommunication Network Business and Digital Appliance Business. Recognized as one of the fastest growing global brands, Samsung Electronics is a leading producer of digital TVs, memory chips, mobile phones and TFT-LCDs.

Like all companies in the business of high tech, Samsung must bring innovative products to market faster while ensuring high quality and holding down costs. It is also faced with the challenge of working with global business partners and its own geographically dispersed facilities. Samsung's strategy for meeting its mission of "technology-based value innovation" relies heavily on what it calls a digital convergence revolution. This revolution features two parts: a digital product development infrastructure (involving design, validation and manufacturing) and digital collaboration.

Samsung is using product lifecycle management (PLM) technology from Siemens PLM Software as the foundation for its digital convergence revolution. Siemens PLM Software is supporting a number of the company's PLM initiatives including: digital product design with automation, large-size data and bill of material (BOM) management, digital mockups, knowledge management and concurrent engineering.

Fully digital design through manufacturing

Digital product development at Samsung begins with creative design, which takes place in a virtual environment built on an in-house industrial design solution and Siemens' NX® I-deas® software. Photorealistic rendering and virtual reality take the place of physical prototypes. Tests of design variations and real-time motion simulation are also performed digitally, making it possible to find and fix errors early in the design process.

Mechanical designers follow a configuration-based design process. Top-down design based on standard structures and specifications is employed. A mechanical library management system based on Siemens' Teamcenter® software enables designers to find and re-use existing parts.



Solutions/Services

NX

Teamcenter

Client's primary business

Samsung Electronics Co., Ltd. is a global leader in semiconductor, telecommunication, digital media and digital convergence technologies.
www.samsung.com

Client location

Suwon
Korea

Special recognition

Grand Prize Winner of
AP PLM Innovation Award 2007

“PLM technology from Siemens PLM Software supports Samsung's PLM initiatives for digital product design with automation, data and bill of material (BOM) management, digital mockups, knowledge management and concurrent engineering.”

Sehyun Kim
Vice President
R&D Innovation Team
Samsung Electronics Co., Ltd.

Samsung has a fully automated part and assembly validation system based on Teamcenter. The system performs more than 500 validation jobs every day in real-time.

Samsung has automated much of the mold design and manufacturing process. The automated system, which was developed in-house, is based on rules and continuously updated corporate knowledge. It helps avoid human error and allows the company to develop molds for a cellular phone in the amazingly short span of just 10 days.

Samsung's process for product data management and BOM management was developed by Samsung Data Systems and Siemens PLM Software engineers using Teamcenter to effectively manage the flow of product data and to automatically generate bills of material, which are synchronized with the CAD product structure.

Benefits across the board

One of the advantages of this fully digital design-through-manufacturing approach is greater efficiency in product design. The ability to find and re-use previously validated CAD data has helped shrink the development cycle by 30 percent. In addition, Samsung's process for evaluating design is now more effective. Using digital renderings and mockups has reduced the need for physical prototypes by 30 percent. Automated BOM generation has reduced errors by 95 percent.

In the manufacturing realm, automation has also reduced errors, as evidenced by a 19-percent decline in corrections needed to molds and a 50-percent reduction in errors found in first production runs. Collaboration has improved as well, with work-in-process and release data shared globally in one integrated system, and CAD-BOM consistency maintained during engineering changes.

Samsung is now preparing to migrate from NX I-deas to the NX product development solution. It also plans to expand its use of Teamcenter overseas, and ultimately to have a concurrent engineering environment that includes all overseas facilities.



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