

How do we transform the process of innovation for high tech and electronics?



Siemens PLM Software offers product lifecycle management (PLM) solutions to build the right product and build the product right

siemens.com/plm

SIEMENS

Industry trends

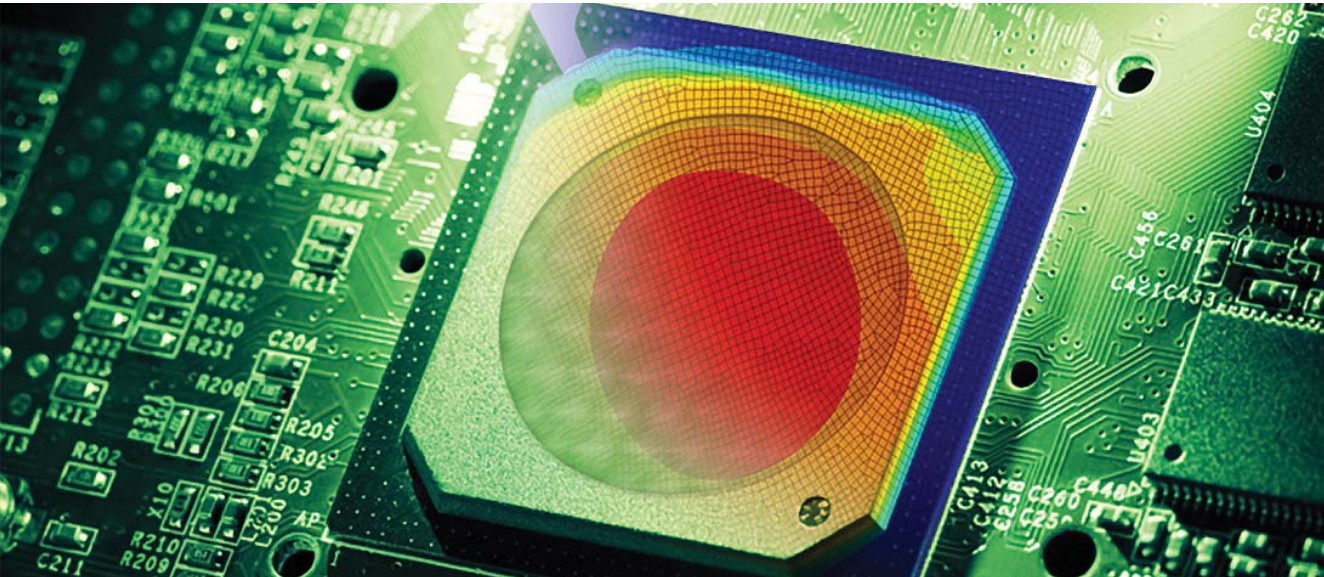


Today's high tech and electronic manufacturers continue to be squeezed by aggressive price points, product design complexities, regulatory requirements and technological change. In turn, these pressures threaten to erode profit margins, contribute to commoditization, complicate the manufacturing process and slow the take-to-market cycle.

Rapidly changing technology is creating short market windows for new products, which increases the need for a more robust new product introduction (NPI) process. High tech and electronics companies, which currently have a NPI success rate of approximately 50 percent, cannot be satisfied with this performance. Causes of NPI failure include the inability to facilitate real-time collaboration and dependence on costly and inefficient physical prototyping, as well as a lack of formal requirements management, poor supply change visibility and unresolved design/manufacturing issues. As a result, product features are not aligned with customer needs, products are late to market and costs are higher than anticipated.

Meeting these challenges is already a daunting task. Globalization presents an additional dimension to these challenges. It requires companies like yours to master the complexity of globalization and facilitate sustainable growth through an optimized process of innovation that includes your partners, planning, marketing, development, manufacturing and supply chain operations.

Business challenges



High tech and electronics manufacturers face a variety of challenging business imperatives. Companies must develop and deliver products that are both highly innovative and cost sensitive while competing in a distributed global marketplace. Manufacturers that aspire to leadership in the high tech and electronics industry are continuously challenged to:

- Increase the product innovation success ratio so that they can bring more desirable products and technologies to market, by identifying and commercializing opportunities with the highest probability for success.
- Improve program profitability by employing effective cost management techniques, such as mass re-use initiatives and virtual prototyping.
- Encourage worldwide development excellence by leveraging a proven platform that encourages structured collaboration and social networking.
- Facilitate design-for-sustainability by integrating both regulatory compliance and larger sustainability needs more efficiently into today's lifecycle processes.
- Effectively manage risk and the operation of today's global value chain by meeting core business requirements such as on-time, on-cost and on-quality product delivery.



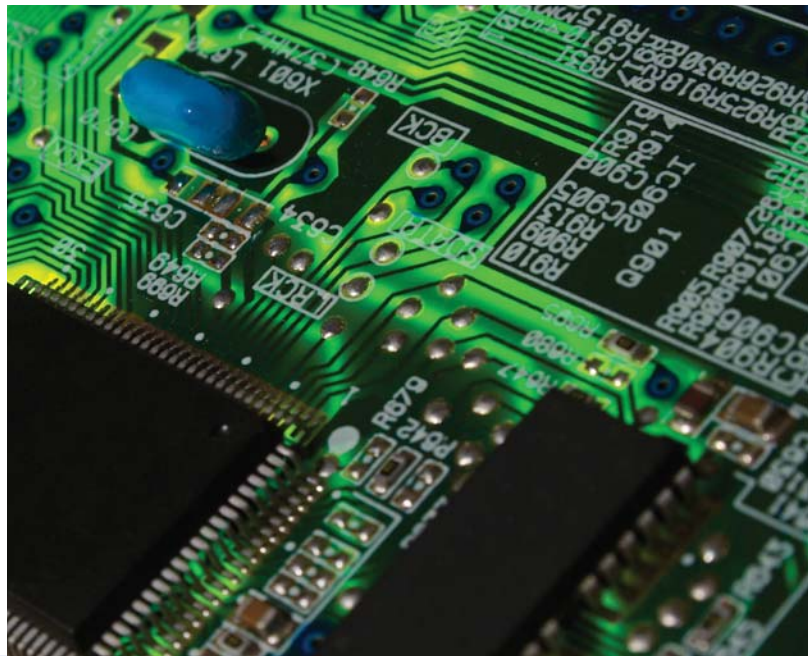
Mastering complexity

Globalization

High tech companies operate with geographic markets, supply chains and innovation networks that are extended and diverse. Emerging markets offer new opportunities for growth, new design talents and new sources of supply competencies. Simple variation of an existing product, or the addition of a factory or design center, might be appropriate for meeting a specific marketplace need. But more often, changing global industry structures, competitive pressures and customer needs significantly increase the complexities, cost pressures, and time-to-market imperatives for your commercial innovation process.

Optimization

Product innovation involves multiple work processes that require the participation of many disciplines working across organizational boundaries, as well as collaboration with outside vendors. These processes enable you to address the needs of targeted global markets. In addition, accurate market alignment and on-time product delivery depend on total visibility into the status of your innovation initiatives, the impact of various product/requirement changes and the identification of potential bottlenecks before they result in irreparable delay. Optimization of the idea-to-product process is essential for managing innovation complexity.



Speed

Short product life cycles, fast changing consumer preferences and rapidly changing technologies make speed-to-market essential. These deadlines are not negotiable and require you to deliver your products precisely on time with no margin for error. Today's complexity is compounded by the need for your supply and design partners to synchronize with your product launch plans.

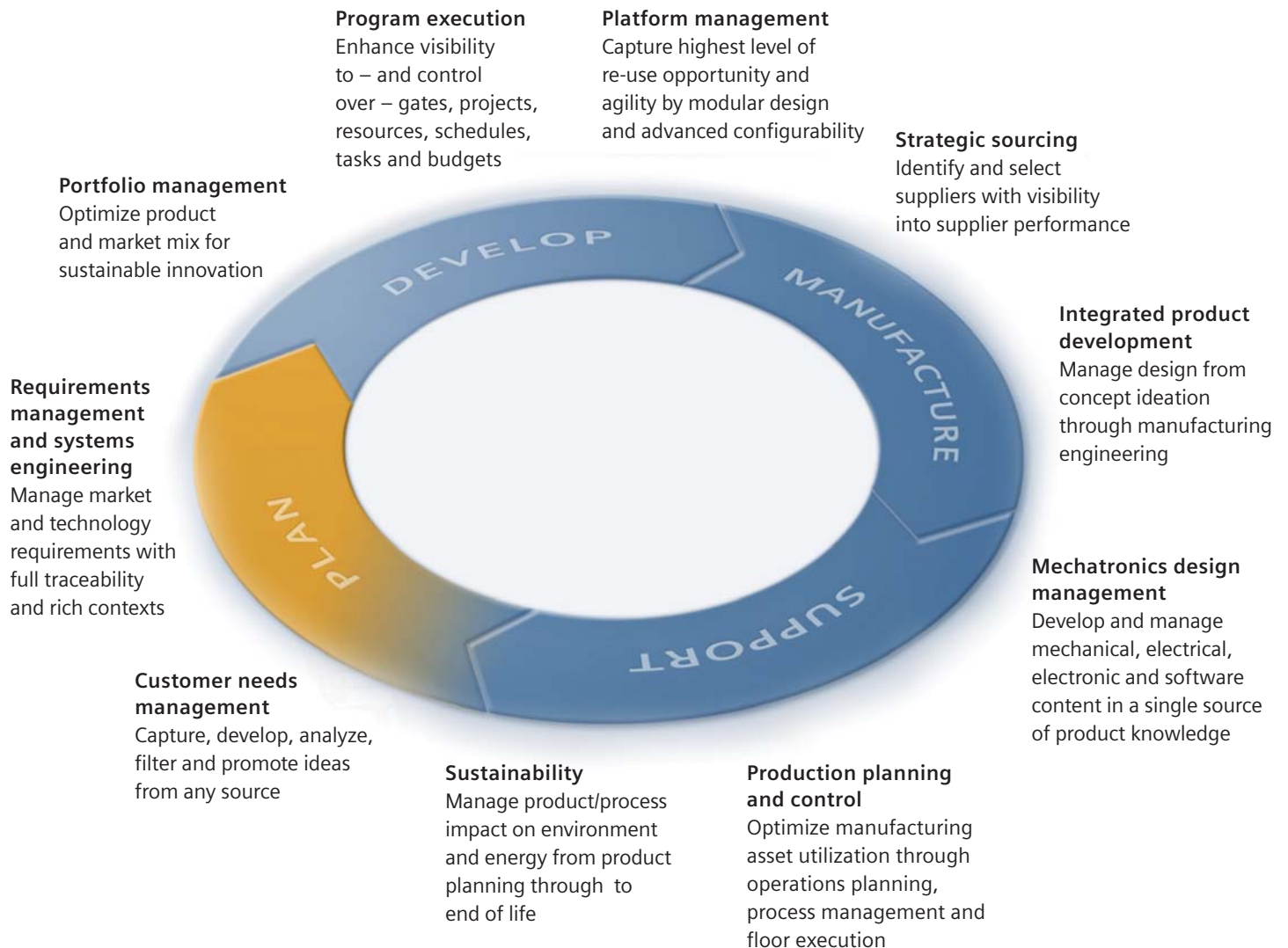
Sustainability

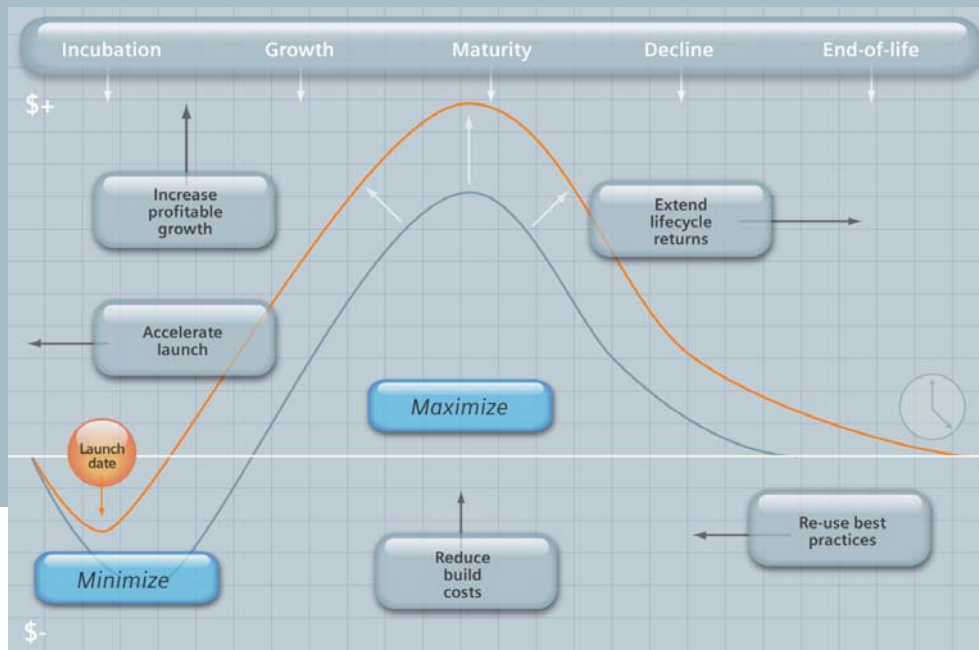
Global marketing requirements are causing manufacturers to adopt a more comprehensive strategy for protecting the environment. In addition, consumers are environmentally aware and making purchasing decisions based on energy efficiencies and the ability of manufacturers to deliver products with earth friendly materials, components and packaging that can be recycled. In today's markets, sustainability goes beyond material compliance. Manufacturers need a systematic approach to determine a product's overall impact on energy consumption and the environment throughout all lifecycle states.

Product lifecycle management for high tech and electronics

Siemens PLM Software's digital platform for high tech and electronics delivers a single source of product, process and production information that can be used to manage your product lifecycle across all of its stages.

Our diverse PLM solutions enable your company to address a single issue or pain point today, while allowing you to build a complete PLM solution step by step. This scalable approach affords you the opportunity to deliver increased value at each step along the way.





PLM benefits for high tech and electronics

Accelerate launch

Bringing innovations rapidly to market enables you to establish brand leadership and higher price points.

A leading Asian electronics company leveraged virtual product development to reduce its first production run errors by 50 percent and deliver a new product with 30 percent fewer prototypes.

Increase profitable growth

You can get higher than industry-average margins by accelerating launch and securing premium pricing, as well as by using a platform approach to deliver product variants/options for diverse markets.

One of the leading producers of home appliances achieved phenomenal profitable growth by implementing quality, part standardization and design modularization innovation.

Extend lifecycle returns

A single authoritative source of product and process knowledge enables you to better evolve your products within their market space, extend their life and maintain their margins.

A leading semiconductor company implemented PLM as an integral part of its revenue enhancement/market growth strategy by maximizing the returns from its reference platform designs and existing intellectual property.

Re-use best practices

You can leverage PLM to confidently and rapidly re-use ideas, requirements, designs and entire platforms across multiple product lines/families, as well as across multiple lifecycle states.

One of the world's largest high-end appliance manufacturers optimized its global design and manufacturing operations by implementing process commonization, platform design and plant planning. These PLM initiatives reduced costs while enabling the company to address more market segments.

Reduce design costs

Concurrent product/production design leads to lower material and operating costs. Effective simulation and contract manufacturing further reduces build cost.

A leading global consumer electronics manufacturer used simulation to validate complex design for manufacturability and reduced initial build cost and time by 50 percent.



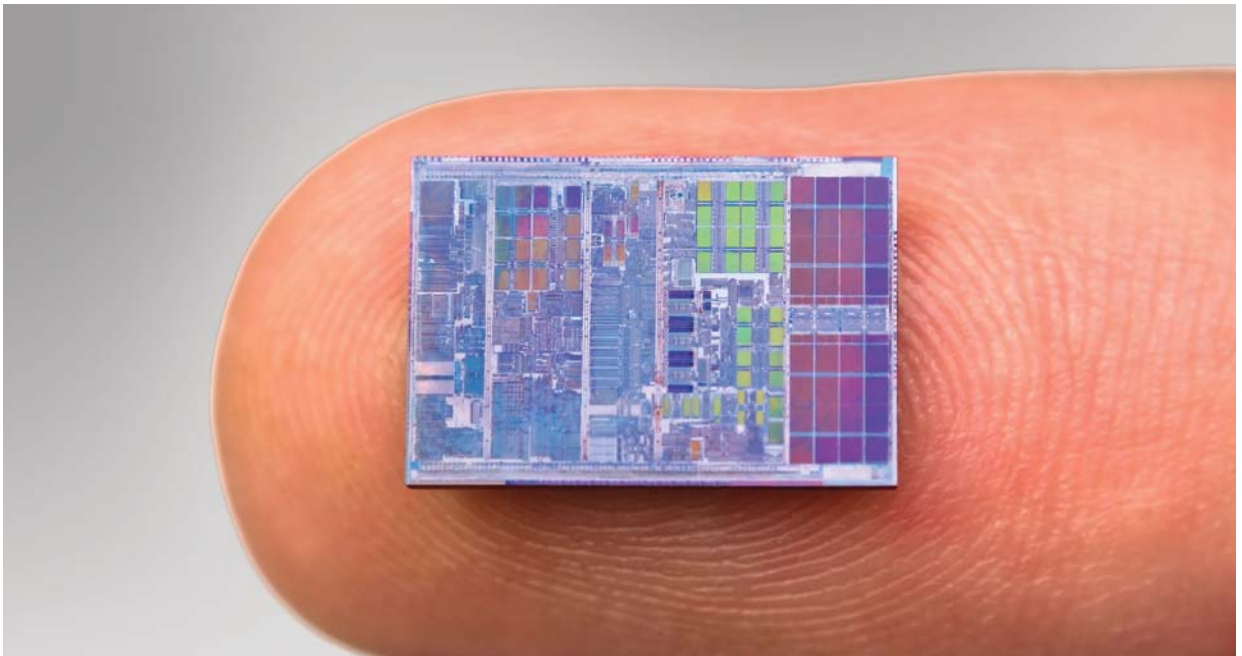
Build the right product and build the product right

There rarely is a shortage of good ideas within any organization or innovation network. But how do you make sure that your most promising ideas – ideas that deliver the most competitive advantage and economic profit – actually make it to market?

Siemens PLM Software regularly invests in developing best practice solutions for the high tech and electronics industry. These best practice-based solutions facilitate key industry-specific processes and capabilities on a PLM platform, giving you the technology needed to build the right product and build the product right.

Our strategic product planning solution enables you to identify promising ideas that lead to right products. In addition, our virtual product development solution can be used to implement highly efficient development/engineering processes for designing and building high tech products faster and more cost effectively.





Transforming your process of innovation

The high tech and electronics industry covers a wide range of market segments. These complex and diversified segments share a series of common challenges, including the need to develop innovative products with a profitable margin and cost effectively manage the process you use to bring these product to global markets ahead of your competition while complying with environmental regulations. Just as importantly, all of these challenges must be met by extended value chains that operate in globally dispersed work environments.

Siemens PLM Software has captured the knowledge, experience, best practices and lessons learned from the world's largest installed base of PLM customers. We use this knowledge to develop integrated solutions tailored to your industry's key challenges. Our solutions for the high tech and electronics

industry target core business processes and competencies required by companies in various market segments. These industry-specific solutions transform your process of innovation across an enterprise footprint that minimizes total cost of ownership while ensuring a rapid path to full deployment.





Solutions for high tech and electronics

Strategic product planning

According to AMR Research, the greatest gap in innovation success requires companies to conquer the front end of their product lifecycle where ideas need to be properly driven to facilitate successful commercialization. Many high tech companies struggle with creating a shared product vision that is derived from customer needs. Often this difficulty is caused by a lack of organizational and process controls for handling the unstructured nature of these front-end processes.

To master the fuzzy front end and take innovation through to commercialization, Siemens PLM Software provides best practice-based solutions including:

- *Customer needs and requirements management*, which you can use to efficiently and securely capture and filter the wisdom of participants across your entire innovation network. In addition, the solution enables you to systematically transpose customer needs into a holistic product vision expressed by a rich hierarchy of requirements.
- *Portfolio planning and control*, which optimizes product portfolio and investment decisions based on market and technology requirements.
- *Program execution management*, which enables you to plan and execute new product launch programs with precise and connected requirements, as well as with appropriate schedules, scope, cost controls and deliverables.
- *Strategic sourcing*, which you can use to identify strategic and long-lead supplies, as well as plan and manage the readiness of crucial new product components/ materials from strategic suppliers.
- *Platform management*, which facilitates a product platform approach for optimizing technology planning, improving productivity and increasing re-use opportunities across diverse product lines/families.

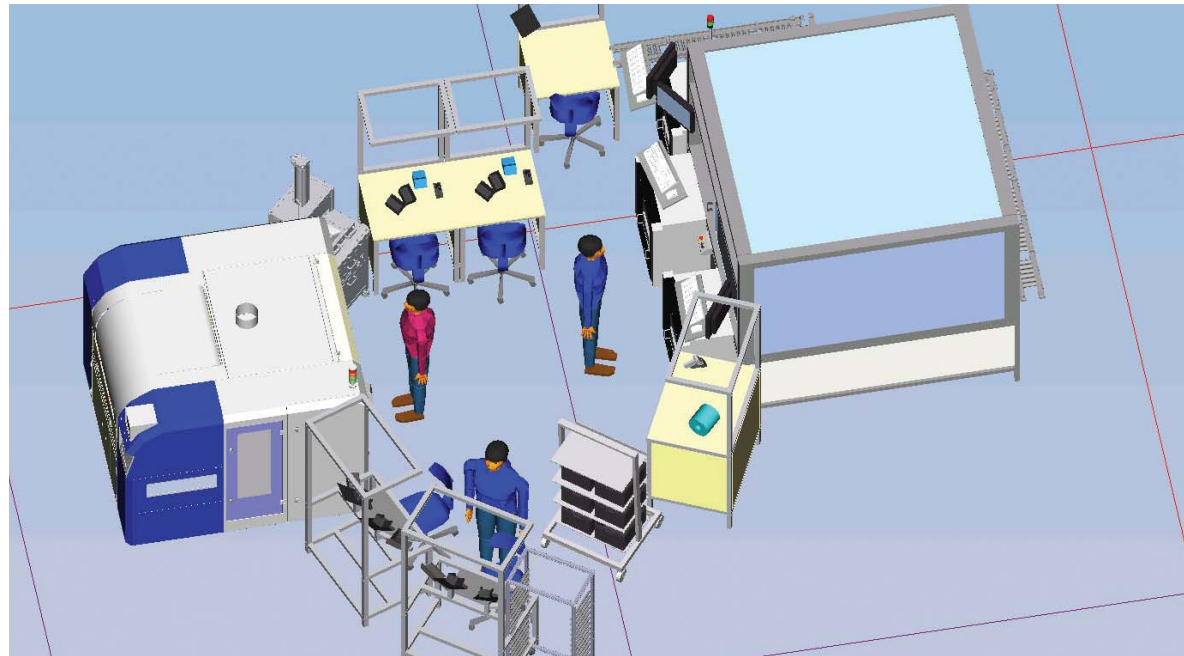


Virtual product development

According to AMR Research, three quarters of all electronics manufacturers recognize the need to eliminate physical prototypes. In addition, most have initiatives in place to digitally validate designs. A leading global consumer electronics manufacturer turned to Siemens PLM Software to improve its virtual product development process. Using our solutions, the company now produces 30 percent fewer prototypes while incurring 50 percent fewer errors in first production runs, resulting in a 30 percent improvement in time to production.

To accelerate product development and reduce dependency on physical prototypes, Siemens PLM Software provides the following virtual product development solutions:

- *Mechatronics process management*, which enables you to securely capture and manage electronic, mechanical and software design complexity and establish a single source of enterprise product knowledge. You can use this solution to manage ECAD designs, component libraries and vendor information, as well as software lifecycle information and MCAD designs across industry leading applications.
- *Integrated product development*, which lets you evolve a product from conceptual design into detailed engineering, tooling design and production planning, without losing geometry or design intent.
- *Digital validation*, which facilitates virtual prototyping by enabling your product teams to quickly evaluate innovative design concepts and identify problems early in the development process, validating key failure factors in electronic products, such as heat, shock, vibration and dust.
- *Global collaboration*, which facilitates intelligent visualization, enabling all design stakeholders to interrogate electronic and mechanical designs (without the need for native design applications) and visually flag issues to support virtual online design reviews. Our solution uses open and secure web-based enterprise collaboration technologies, combining formal workflow with ad-hoc social networking processes to promote rapid decision making and maintain traceable accountability.



Solutions for high tech and electronics

Digital manufacturing and contract manufacturing management

Siemens PLM Software integrates best-of-breed digital manufacturing solutions with its proven knowledge management foundation to provide the most extensive set of solutions for manufacturing excellence, including:

- *Manufacturing process optimization*, which covers the entire NPI process including DFA/DFT, PCB assembly and test through to documentation. This solution enables up-front assembly and testability checks to be performed at both the board and box level, thereby ensuring that the NPI process is done correctly the first time. The solution also provides a single software platform to program SMT single and multi vendor configurations, as well as single job and multi-job scenarios.
- *Manufacturing execution*, which covers component-to-final product shipment. The solution's traceability capabilities facilitate customer and regulatory compliance initiatives at the shop floor level, as well as production control for total visibility of key

performance indicators (KPIs) including material management work in progress, quality management, repair management and overall equipment efficiency at the plant or enterprise level. The solution provides integration with enterprise systems, including ERP/MRP, PLM and other shop floor applications.

- *Outsourced manufacturing management*, which facilitates key contract manufacturing processes between OEMs and their contractors. The solution enables companies to exchange high fidelity product data with configurable and granular access control. It also provides quality data gathering and closed-loop change management capabilities. Executives and managers can use the solution to gain visibility into their extended manufacturing operations and supply chains through performance-related dashboards and reports, thereby minimizing business risk.



Platform for sustainability

Complete enterprise visibility into all aspects of a product's planning, design, development, manufacturing and sustainment is required to ensure that your company achieves its sustainability-related business goals. Siemens PLM Software provides a complete platform for sustainability that enables high tech and electronics manufacturers to plan and design for sustainability, operate sustainable manufacturing, facilitate sustainable service and end-of-life management, and ensure governance, compliance and reporting across an entire lifecycle. This enterprise foundation can be leveraged by OEMs and suppliers to perform:

- *Market requirements management*, which enables you to compile, break down, allocate and track unique requirements (such as REACH, RoHS and China RoHS) in OEM target markets. This solution enables you to drive and validate requirements for hazardous materials, product packaging and eco-labeling and end of life throughout a complete lifecycle.
- *Environmental compliance governance, analysis and reporting*, which facilitates effective tradeoff analysis while evaluating hazardous materials and other sustainability mandates during product design and development. Siemens PLM Software provides a solution to request and gather IPC-1752 documents from your supply chain. BOM grading capabilities deliver quick visual proof that REACH and RoHS environmental compliance can be met.
- *Lifecycle assessment*, which facilitates a "bill of sustainability" that provides structured visibility into the various stages off the lifecycle. The bill of sustainability enables you to perform what-if analysis to ensure that changes made to materials during design will not sabotage established objectives, such as your transportation goals.
- *Sustainable manufacturing*, which enables you to virtually optimize your manufacturing processes to ensure environmental friendly plant asset usage and maintenance.
- *End-of-life management*, which you can use to responsibly manage service and end-of-life processes. This solution provides designers and other engineers with early visibility to part obsolescence. It can be leveraged to facilitate key end-of-life handling processes, as well as procedures for dealing with hazardous and recyclable equipment and components.

Industry advantages with Siemens PLM Software

Scalable

Large global companies need a collaborative platform that can scale to tens of thousands of users without losing performance and data integrity. Siemens PLM Software's enterprise system platform is designed for massive, scalable use and quick information retrieval regardless of global location.

One of the world's leading manufacturers of appliances leverages Siemens PLM Software's PLM platform to enable users from multiple global design and manufacturing centers to access a single authoritative source of product and process knowledge on a 24x7 basis.

Open

Siemens PLM Software has a long history of promoting and practicing open architecture technology as evidenced by its adoption of industry leading standards and integration methods. Our service oriented architecture (SOA) improves flexibility and helps optimize existing IT investments. By applying an effective SOA and other open standards to the PLM process, your company can introduce more business capabilities, reduce IT complexity and accelerate IT implementation. This approach facilitates the re-use of more applications via web services or other open standards, enabling you to better align your PLM initiatives with other business activities.

With many integrations to SAP, Oracle, Microsoft, and other leading engineering systems, Siemens PLM Software's SOA services provide an open, high-performance, coarse-grained interface for the easy flow of financial, planning and engineering data that enhances the enterprise PLM process.

Proven

Siemens PLM Software solutions are deployed by the world's largest companies with long histories of innovation, including many of the world's leading high tech and electronics companies. These companies rely on Siemens PLM Software's proven leadership in applying technology to support their product and process innovations.

A internationally renowned semiconductor manufacturer extensively applies PLM best practices, including a product platform approach to its design and development operations. The company's PLM-enabled single source of authoritative product and process information and requirement management/system engineering capabilities have increased its ability to profitably satisfy the needs of more market segments by lowering development costs, reducing the development cycle and improving product/process quality.

Flexible

Companies can begin to implement their PLM platform at any point in the lifecycle process, establishing a single source for all enterprise knowledge. Our PLM platform provides maximum flexibility to configure any process instead of customizing it, thereby lowering total cost of ownership. Siemens PLM Software's best-practice templates and preconfigured workflows match the way your company currently performs its business.



A leading high tech innovator is transforming key operations that were previously performed on a semi-autonomous basis by different business units. The company's new highly collaborative virtual enterprise takes advantage of Siemens PLM Software solutions' ability to facilitate product innovation from concept gathering to investment decision planning and requirement engineering through to product platform and line design/development, culminating in manufacturing.



Answers for high tech and electronics

Siemens is one of the world's largest and most respected companies with 427,000 employees working in more than 190 countries around the globe. This scope and experience affords Siemens a unique understanding of global business requirements. Siemens' technologies help bring together product and production lifecycles, facilitating unprecedented speed-to-market for industry-leading companies around the world.

Siemens PLM Software is helping its customers accelerate launches, reduce cost, increase supply chain efficiency, build corporate knowledge and maximize the value derived from their products throughout their entire lifecycle. A unified software platform delivers these strategic advantages by providing innovation capabilities specially tailored for high tech and electronics companies. This virtual world significantly improves collaboration, accuracy and time-to-market at a lower total cost of ownership and faster time to full deployment.

Let Siemens PLM Software transform your process of innovation and turn more ideas into successful products.



About Siemens PLM Software

Siemens PLM Software, a business unit of the Siemens Industry Automation Division, is a leading global provider of product lifecycle management (PLM) software and services with nearly 6.7 million licensed seats and 63,000 customers worldwide. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with companies to deliver open solutions that help them turn more ideas into successful products. For more information on Siemens PLM Software products and services, visit www.siemens.com/plm.

Siemens PLM Software

Headquarters

Granite Park One
5800 Granite Parkway
Suite 600
Plano, TX 75024
USA
972 987 3000
Fax 972 987 3398

Americas

Granite Park One
5800 Granite Parkway
Suite 600
Plano, TX 75024
USA
800 498 5351
Fax 972 987 3398

Europe

3 Knoll Road
Camberley
Surrey GU15 3SY
United Kingdom
44 (0) 1276 702000
Fax 44 (0) 1276 702130

Asia-Pacific

Suites 6804-8, 68/F
Central Plaza
18 Harbour Road
WanChai
Hong Kong
852 2230 3333
Fax 852 2230 3210

www.siemens.com/plm

© 2010 Siemens Product Lifecycle Management Software Inc. All rights reserved. Siemens and the Siemens logo are registered trademarks of Siemens AG. D-Cubed, Femap, Geolus, GO PLM, I-deas, Insight, Jack, JT, NX, Parasolid, Solid Edge, Teamcenter, Tecnomatix and Velocity Series are trademarks or registered trademarks of Siemens Product Lifecycle Management Software Inc. or its subsidiaries in the United States and in other countries. All other logos, trademarks, registered trademarks or service marks used herein are the property of their respective holders.

7045-X13 7/10 A