SIEMENS

Product lifecycle management from concept ideation to retirement

Siemens PLM Software

PLM software to build the right product – and build the product right

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Siemens PLM Software

Managing complexity in a changing world

Today's products and processes are getting more complex. Siemens PLM Software provides a product lifecycle management solution that covers everything from concept ideation to retirement, enabling you to build the right product – and build the product right.


SCHMIDT

Innovation drives product success

Two-thirds of today's decision makers say that innovation is one of their top three strategic priorities[1]. Their concerns are motivated by the fact that:

- Products that represent 75 percent of today's revenues will be obsolete by 2010
- Eighty-six percent of new product ideas never make it to market
- Of those that do make it, 50 percent to 70 percent fail

Innovation enables your organization to turn ground-breaking ideas into winning products and services ahead of the competition. Innovation is the engine that powers your ongoing drive to capture market share and leverage product differentiation to maximize profitability. Innovation minimizes operational cost and improves operational efficiency.

Best-in-class companies innovate more effectively and use innovation to drive business benefit throughout the product lifecycle. Average companies achieve one product success for every 3,000 new ideas. Best-in-class companies are six times better at getting new product ideas to market because they:

- Generate more ideas than average companies
- Eliminate more "bad" ideas before starting major development
- Systematically re-use best practices to drive their innovation processes
- Derive more business benefits from their innovation investments

At Siemens PLM Software, we believe that transforming your process of innovation is crucial for turning more ideas into successful products. Transformational innovation enables your organization to gain competitive advantage. It gives your processes and your factories the flexibility they need to put your customers first.

We believe that product lifecycle management (PLM) is the mission-critical system that every company needs to continuously facilitate product and process innovation. PLM provides immediate access to the knowledge that you need to make the right business decisions – decisions that enable your innovation investments to deliver more business benefits.

Successful products are the key to market leadership and top-line financial growth. Unite your enterprise around product and process innovation. Unleash the hidden power within your product lifecycle by transforming your process of innovation.

[1] Innovation 2007: A BCG Senior Management Survey, Boston Consulting Group, 2007.

PLM transforms your process of innovation

Companies that drive product success through product and process innovation must be able to maximize the business value of their innovation investments. Four key requirements must be met to maximize the business value of your innovation investments.

Four requirements for successful innovation

Effective globalization. Today's companies must be able to maximize their globalization advantages to support a "design anywhere, build anywhere, support anywhere" business strategy. Follow-the-sun processes should be in place to connect geographically dispersed and diverse partners, suppliers and customers into a global value chain and assure their continued alignment.

Fully optimized enterprise resources. All lifecycle processes should be managed to maximize product development and manufacturing productivity, ensure peak performance and eliminate inefficiency. Project resources need to be rigorously optimized to appropriately balance marketplace demands for product quality, cost and scheduling.

Accelerated time-to-market. Lean processes must be in place across every phase in the product lifecycle. Product and production teams need to eliminate nonvalue-added tasks from their everyday processes. Collaboration and continuous feedback need to be facilitated to eliminate unnecessary rework. Downstream processes need to be started early and performed in parallel with upstream processes as much as possible to compress time-to-market.

Sustainable product content. Requirements-driven processes must be implemented to deliver innovative content that the market wants at a price it is willing to pay – as well as to ensure product and process compliance with environmental, government, industry and international regulations. Sustainable content reduces business risk by helping you make certain that your products are "right to market" and that you avoid noncompliant conditions that prevent your products from being sold into new markets.

PLM's innovation role

Because PLM is able to maximize the business advantage of the rich product and process data that today's companies author and manage, it is recognized as the best technology for meeting these four innovation requirements. In fact, best-in-class companies are four times more likely to use PLM technology to drive their innovation initiatives than

average companies.PLM provides a transformational business model that unites global partners, suppliers and customers in a continuous process of innovation. A PLM foundation enables breakthroughs to originate anywhere at any time by providing product teams with the means to elevate, evaluate and commercialize their best ideas.

Best-in-class companies use PLM to distribute their operations so that they can innovate at every stage of the product lifecycle across a global value chain. With PLM, companies are able to establish an innovation process curve that drives five of today's most highly prized business benefits, including:

- Accelerated product launch
- Profitable revenue growth
- Reduced manufacturing cost
- Extended lifecycle returns
- Re-usable best practices

Addressing innovation at two levels

To satisfy the requirements for successful product and process innovation, today's companies must simultaneously address innovation at two levels by:
- Building the right product
- Building the product right

Build the right product

In today's demanding global economy, product success depends on your ability to beat your competitors to market with products that capture your customers' imagination with stylish yet appropriately functional content that performs as required while being delivered at a price the market is willing to pay. In other words, your products must be able to satisfy customer requirements for:
- Timing
- Function
- Performance
- Style
- Price

Since these variables frequently change during the course of a product lifecycle, your innovation process must be able to account for change and easily accommodate its demands on a systematic and repeatable basis.

Build the product right

Delivering the right product to market is only half the battle that today's product makers face. Best-in-class companies employ lean manufacturing and design-for-manufacturing initiatives to optimize the product lifecycle's downstream processes. The goal here is to enable product development teams and manufacturing teams to work together as early in the product lifecycle as possible with an eye to:
- Minimizing production cost
- Improving product quality
- Delivering more reliable products
- Providing easier to service products
- Driving "green" initiatives that facilitate a sustainable environment

Unifying your lifecycle with PLM

There was a time when companies adopted productivity tools to improve the efficiency of individual product development and production processes. But operated independently, these technologies soon will peak in terms of their ability to break down the complexities that slow your operations and diminish your right-to-market confidence.

PLM enables you to transform your process of innovation so that you can build the right products as well as build your products right. An enterprise PLM strategy enables you to establish a digital environment that you can use to create, develop, manufacture and manage innovation on comprehensive basis.

PLM provides a means for establishing coherent, repeatable processes, as well as managing consistent and accurate information across a product lifecycle that ranges from concept ideation to product retirement.

PLM delivers real results

Manufacturers who have embraced PLM are realizing its benefits today.

- *One of the most respected brands in heavy-duty trucks reduced direct and indirect labor costs by 30 percent on a new plant startup*
- *The first fully integrated, pan-European defense firm created a single unified operating intellectual property structure*
- *One of the world's most prestigious aerospace firms achieved 50 percent savings in engineering and 80 percent savings in manufacturing by enabling teams to work together as early in the product lifecycle as possible*
- *A global auto manufacturer achieved $1 billion in annual savings and reduced cycle time from four years to one*
- *One of China's leading manufacturing companies reduced engineering changes by 70 percent on large assemblies of up to 10,000 components*
- *A leading women's fashion chain is reducing the time needed to take a design from initial sketch to finished item (excluding shipping times) by up to 30 percent*

What is PLM?

Product lifecycle management is an integrated, information-driven strategy that speeds the innovation and launch of successful products. It is built on a common platform which serves as a single repository of all product-related knowledge, data and processes. As a business strategy, PLM lets distributed organizations innovate, produce, develop,support and retire products as if they were a single entity. It captures best practices and lessons learned, creating a storehouse of valuable intellectual capital for systematic and repeatable re-use.

As an information technology strategy, PLM establishes a coherent data structure that enables real-time collaboration and data sharing among geographically distributed teams. PLM lets companies consolidate multiple application systems while leveraging existing legacy investments during their useful lives. Through open APIs and adherence to industry standards, PLM minimizes data translation issues while providing users with information access and process visibility at every stage of the product's life.

PLM's business benefits

Becoming an innovation-driven company requires the participation of your entire value chain – from design, manufacturing and production to strategic partners, key suppliers and customers.

When you work with Siemens PLM Software, you can move forward strategically while achieving near-term results. An open, standards-based portfolio of PLM solutions spans the product lifecycle and establishes a platform for innovation. As you address specific business issues, you build a solid foundation for future success.

Once your PLM platform and the solutions you deploy on top of it are in place, your company will be able to realize measurable innovation benefits both immediately and over the long term.

Accelerate launch
Traditionally, companies brought their products to market in time-consuming serial processes that delayed the participation of downstream contributors, such as suppliers, manufacturing experts and service/maintenance providers. By allowing you to execute as many lifecycle tasks as possible in parallel processes, PLM enables you to streamline and collapse critical stages in your product lifecycle. PLM delivers aligned, accurate and highly synchronized product knowledge to multiple disciplines early in your lifecycle – thereby avoiding the cost and scheduling impact that comes when late suggestions and unexpected concerns arise from downstream players. PLM enables you to beat the competition to market with innovative product content that carries first-to-market advantages and drives early product sales.

Increase profitable growth
PLM allows you to create, capture and share the product-related requirements, expectations and preferences of targeted customers and markets and align these requirements with specific innovative content that your customers want for a price they can afford at the time when it is needed. PLM lets you vet new product ideas against quickly rising customer requirements and cost effective manufacturability. Global cross-functional teams collaborate in real time on the ideation process, each contributing their unique experience and perspective. Knowledge and "lessons learned" are captured for potential re-use in a process of continual innovation.

PLM facilitates mass customization by enabling you to rapidly and cost effectively deliver customized product offerings that satisfy the needs of individual customers and targeted market segments. PLM combines the advantages of configuration management with option and variant management. These state-of-the-market capabilities allow you to perform portfolio planning in as flexible and continuous a process as possible.

Reduce build cost

PLM allows you to slash cost across all of the stages in your product lifecycle – which in turn, enables you to minimize the cost of the product offerings that you plan, develop, manufacture and support. For example, by leveraging PLM to understand the time and resource impacts of proposed design changes and requirements changes, you can make decisions that minimize your lifecycle and product costs. By using PLM to catch design flaws up front in your lifecycle, you can avoid the cascading rework and cost associated with changing your products during the manufacturing stages of your product lifecycle.

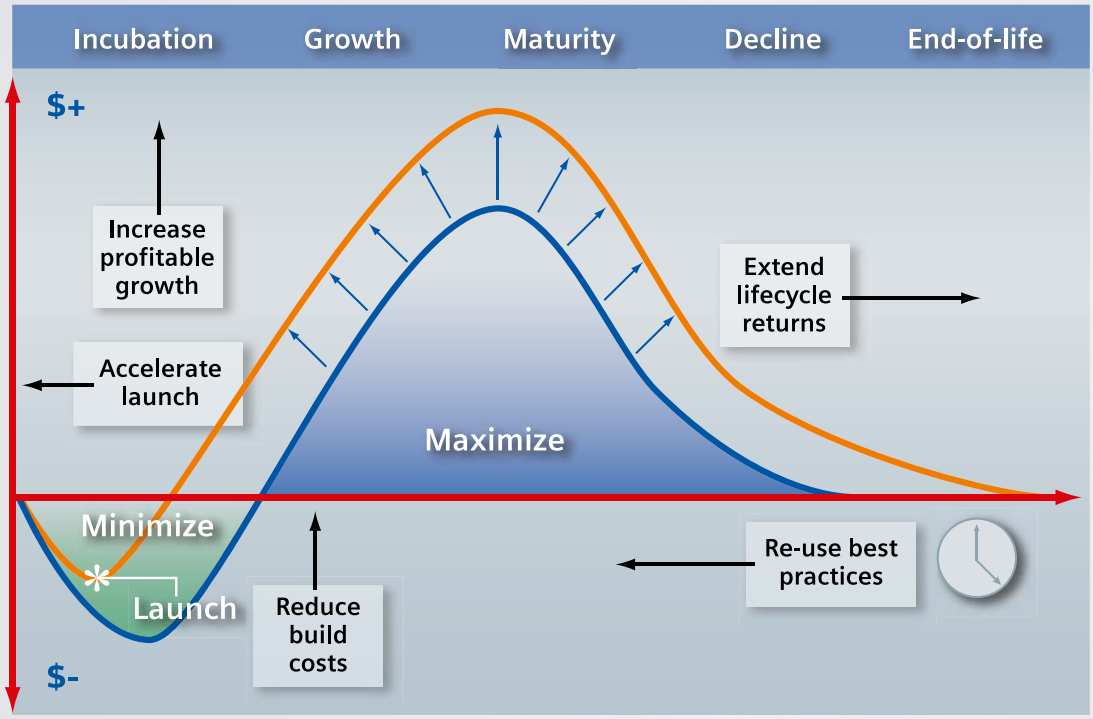
You can use PLM to incorporate the concerns of your maintenance and service groups into your product designs and minimize warranty costs. By digitally creating and re-using your manufacturing plans, plant information and manufacturing processes, you can reduce your overall operational costs. You can also use PLM to implement virtual prototyping that enables you to drastically reduce the validation costs associated with physical prototyping.

Extend lifecycle returns

PLM enables you to cost effectively deliver product enhancements, derivatives, niche offerings and add-ons that extend the profitable duration of your product lifecycle. PLM facilitates this objective by enabling you to create product platforms that you can use to accelerate your startup processes, minimize your take to market cost and maximize the revenue generated by a product's initial release – as well as by its successors and derivatives.

Re-use best practices

PLM enables you to maximize the re-use of your best-practice processes, intellectual capital, human resources, product plans, production plans, production facilities and value chains across a continuing set of take-to-market programs. New take-to-market programs can be quickly started and continuously improved because you have a full and complete set of product and production management capabilities at your fingertips. There is rarely a need to start new programs entirely from scratch. PLM-driven re-use is especially valuable because it facilitates mass customization, which enables you to rapidly and cost effectively respond to customer demands for more personalized products.



Industry solutions built on top of your innovation platform

Siemens PLM Software offers a broad set of industry-specific solutions that are delivered on top of a PLM innovation platform. By working closely with our customers as they implement their PLM solutions in real-world settings, we have gained an unsurpassed level of industry expertise.

Siemens PLM Software has learned how given industries adopt today's most popular innovation initiatives and how these initiatives can benefit from preconfigured best-practice processes. Industry best practices are especially important for companies that want to maximize the return on their lifecycle investments and more closely predict when their solutions will deliver the business results they expect.

Siemens PLM Software currently provides out-of-the-box industry-specific solutions for a wide variety of industries, including:

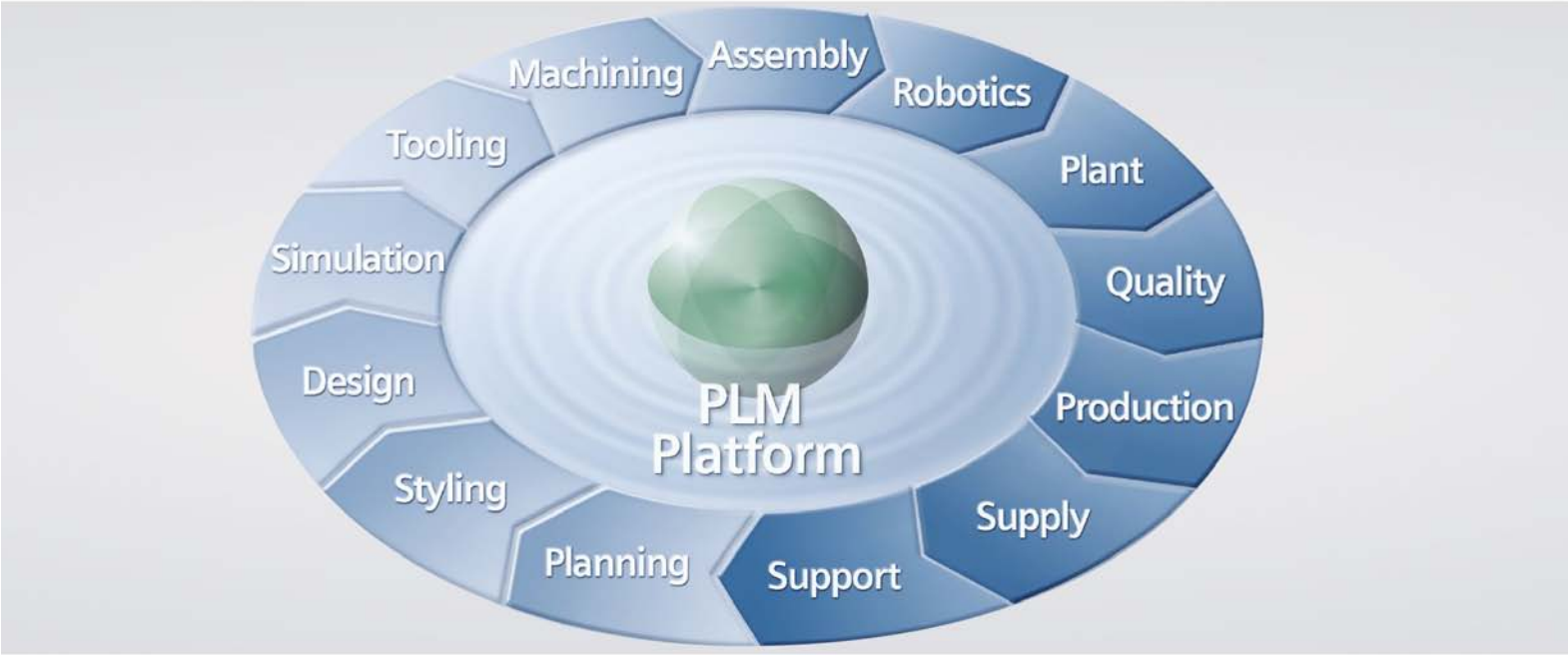
- Aerospace and defense
- Automotive and transportation
- Consumer products
- Government, education and services
- High tech and electronics
- Machinery and industrial products
- Life sciences
- Energy and utilities

These solutions typically leverage a robust PLM innovation platform capable of addressing multiple aspects of the product lifecycle, including:

Planning and management. Best-in-class companies use PLM to plan their innovation investments. Decision makers use PLM tools to assess each proposed innovation project in terms of its alignment with the company's strategic objectives. PLM provides robust management capabilities to drive project execution and optimize the project's resources to ensure that both cost and scheduling requirements are being properly met.

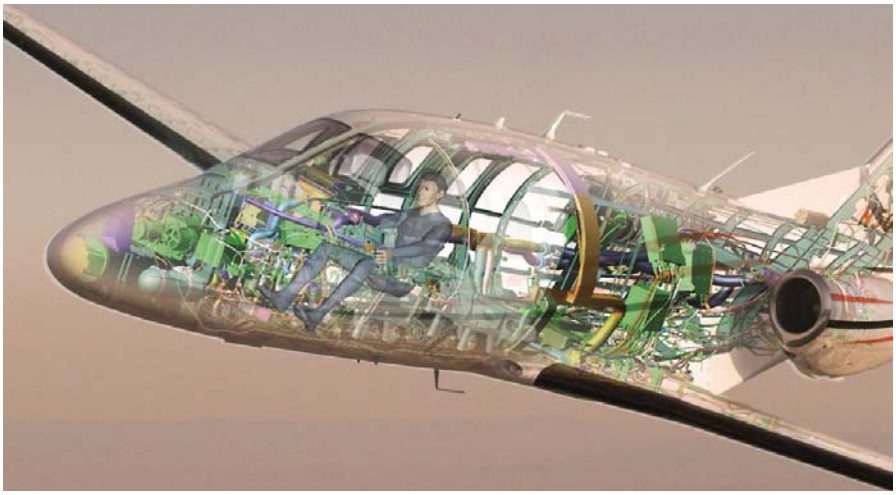
Product development. PLM-driven solutions facilitate a unified product development environment where every development phase from concept ideation to manufacturing engineering can be performed in parallel as much as possible to collapse development time, align upstream and downstream development activity and establish a sharable base of knowledge that can used to minimize rework.

Manufacturing. PLM-driven solutions enable companies to link all manufacturing disciplines with their product development counterparts. By associating product, process, resource and plant data in a single environment, PLM solutions bridge the gap between product



design and product delivery. PLM provides digital continuity that enables manufacturing companies to leverage the power of their global manufacturing operations, improve production efficiency, maintain manufacturing quality and boost profitability.

Service and support. PLM-driven solutions enable companies to establish service data management environments where knowledge about the product while it is being serviced and maintained can be captured, optimized and utilized. This information is particularly useful for improving maintenance, repair and overhaul (MRO) functions including maintenance planning, maintenance execution and material management.



Siemens PLM Software's enterprise solution portfolio

Siemens PLM Software is widely recognized as a visionary leader in providing an open PLM platform and superior software solutions that support all stages of the product lifecycle.

Siemens PLM Software offers the broadest scalable portfolio of software solutions on the market today for both large enterprises and mid-market companies. By providing a digital environment for collaboration across your organization, these solutions help you innovate more, innovate faster and optimize your operational resources.

Digital product development, featuring the NX™ portfolio and the Solid Edge® suite, lets you establish a holistic approach to product development and introduction that stresses knowledge capture and re-use in a managed development environment. Visibility into information, programs and processes leads to greater flexibility, responsiveness and efficiency. Embedded real-time simulation drives product innovation by enabling you to design-in quality as well as performance.

Digital manufacturing, featuring Tecnomatix® software and its related product suite, combines knowledge management with process improvement in a virtual environment that lets you optimize the quality, process, plant, resource and simulation aspects of your manufacturing operations. Improved collaboration and control of manufacturing operations helps facilitate the economic success of innovative product designs.

Digital lifecycle management, featuring the Teamcenter® solution suite, enables globally dispersed enterprises to engage every facet of their business in new product introductions. Integrated idea capture and management, real-time conferencing and project and portfolio management tools are combined with industry-leading product design and development solutions in a single, shared source of product and process knowledge.

Velocity Series™ addresses the needs of small to mid-sized manufacturers whose PLM requirements are emerging and who want to establish a digital environment that can evolve as they grow.

These solutions enable your company to establish its own PLM platform. They have been widely adopted because of their high performance, interoperability and depth of embedded industry knowledge.

Four unique advantages
Siemens PLM Software provides unparalleled best-practice solutions that are:

Open. Our open-by-design architecture protects your PLM investments while facilitating interoperability with other best-of-breed systems.

Scalable. Our highly scalable and robust technology enables customers to seamlessly expand their implementations from 1,000 to 10,000 to 50,000 seats.

Flexible. Our innovation platform is extremely flexible, enabling customers to deal with ongoing change and increasingly complex product lifecycles.

Proven. The solutions we deliver have been proven time and again in the real-world marketplace. The average tenure of our top 100 customers is 18 years. At Siemens PLM Software, we've proven our commitment to you – We never let a customer fail.

We would like the opportunity to partner with you as you look to improve product success through superior product lifecycle management. We are eager to start working with you today.

Siemens Industry 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

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 69,500 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.

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