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2011 PLM

A BUYER'S GUIDE

PRODUCT LIFECYCLE MANAGEMENT



Managing Automation®

RESEARCH SERVICES

A Report Prepared by:
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Category Introduction

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RODUCT LIFECYCLE MANAGEMENT (PLM) IS A STRATEGIC BUSINESS APPROACH THAT APPLIES A CONSISTENT SET OF BUSINESS SOLUTIONS IN SUPPORT OF THE COLLABORATIVE CREATION, MANAGEMENT, DISSEMINATION, AND USE OF PRODUCT DEFINITION INFORMATION ACROSS THE EXTENDED ENTERPRISE. It spans product concept to end of life, integrating people, processes, business systems, and information.

PLM forms the product information backbone for a company and its extended enterprise. It is composed of multiple elements, including foundation technologies and standards (e.g., XML, visualization, collaboration, enterprise application integration); information authoring and analysis tools (e.g., mechanical design, electronics design, software engineering, technical publishing, finite element analysis); core functions (data vaults, document and content management, workflow, product structuring, program management); functional applications (configuration management, engineering change control); and business solutions (new product introduction, supply chain collaboration)—all incorporating best practices and methods.¹

The arrival of PLM as a significant business

process is often traced to the automotive industry in the mid-1980s, when American Motors Corp. (AMC) was looking for a way to speed up its product development process to compete more effectively against its larger competitors.² After introducing its compact Jeep Cherokee, which launched the modern sport utility vehicle (SUV) market, the company began development of a new model, brought to market as the Jeep Grand Cherokee.

The first part of AMC's effort to speed product development was the implementation of a computer-aided design (CAD) software system to facilitate engineering productivity. The second part was a new communications system that allowed conflicts to be resolved more rapidly and reduced cost-intensive engineering changes by keeping all drawings and documents in a central database. The new system was so effective that Chrysler, which acquired AMC, expanded it throughout its enterprise, connecting everyone involved in designing and building products. Thus it became the industry's lowest-cost producer, with development costs half of the industry average.³

The benefits of PLM can be far-reaching:

- ❑ PLM helps reduce the cost of a product.
- ❑ PLM helps bring better products to market faster, and enables better support

of customers' use of products.

- ❑ PLM enables the value of a product to be maximized over its lifecycle.
- ❑ PLM provides transparency about what is happening over the product lifecycle.⁴

Additionally, the market developments driving PLM are manifold and growing:

- ❑ Outsourcing has led to long design and supply chains, dispersing product development, manufacturing, and support activities over different organizations, often on different continents. Managing this truly extended enterprise is difficult.
- ❑ The functionality of products is increasing, making their development and support more complex. The advent of "total solutions" as opposed to discrete products exacerbates this situation.
- ❑ The competitive landscape in a global marketplace is more intense, and is shrinking windows for product development.
- ❑ Consumers are increasingly demanding customized products, which are more difficult to develop and support than standard products.
- ❑ Both regulation and deregulation are adding pressure. New product and safety regulations (e.g., EU Directives) are increasing the need for oversight and

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compliance assurance, while corporate deregulation has led to the breakup of large organizations with well-defined responsibilities. These are now replaced by numerous companies, contractors, and subcontractors with blurred relationships.⁵

Historically, PLM was pioneered in larger enterprises with the financial wherewithal to invest the necessary resources to understand the approach; acquire, implement, and improve the technologies; test and validate the benefits; and establish the disciplined organizational practices necessary to make PLM effective.⁶

Today, PLM is being leveraged by enterprises of all sizes, as small and midsize businesses face the same increasingly complex product development milieu and competitive market as larger manufacturers.⁷ Utilization of PLM by small and midsize concerns has shed light on characteristics or needs that are particularly challenging for PLM solution vendors:

- ❑ Expectations of rapid business impact
- ❑ Low total cost of ownership (e.g., software, services, and support), with low initial costs and low operating costs of customers' use of products
- ❑ Extremely low risk tolerance
- ❑ Faster implementation and time-to-production

- ❑ Limited corporate IT resources; limited resources for modifying current processes
- ❑ Importance of out-of-the-box functionality, pre-configured processes, and templates/guidance for achieving best practices
- ❑ Use of common PC and Web platforms
- ❑ Need for better collaboration across supply and demand chains
- ❑ Need for embedded visualization and digital mockup ability⁸

PLM should not be seen as a single software product, but as a collection of software tools and working methodologies integrated to address single stages of the product lifecycle, connect tasks, or manage the whole process.

PLM encompasses significant areas of process—not just program and project management processes, but also the processes required to manufacture the product or plant, operate it in the field, and dispose or decommission it at the end of its useful life. PLM solutions help define, execute, measure, and manage key product-related business processes. Manufacturing and operational process plans, once viewed discretely, are now seen as an inherent part of PLM. Processes and the workflow engines that control them help ensure complete digital feedback to both users and other business systems throughout each stage of the product lifecycle.⁹ ❑

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The Technology Landscape

PLM environments facilitate innovation on all fronts by providing clear, accurate, and valid information across the extended enterprise.

THOUGH IT HAS BEEN AROUND AS A CONCEPT SINCE THE 1980S, THERE REMAINS CONSIDERABLE UNCERTAINTY ABOUT WHAT PLM IS OR CAN DO. THIS CONFUSION IS PREVENTING MANY COMPANIES FROM ADOPTING PLM.¹⁰

A solid understanding of a PLM system and the capabilities it offers is necessary to take advantage of the benefits it may provide. Additional time must be spent understanding an organization's product development processes as well as desired changes. Lack of a clear understanding of either of these elements contributes to the number of challenges, anticipated and not anticipated, that companies encounter as they implement PLM.¹¹

This must be viewed in the context of today's business environment. In the face of increasingly volatile competition, short-term drivers are taking a higher priority simply on the basis of survivability. Businesses everywhere, large and small, have been stressed. The result is a decided shift to bottom-line priorities, such as cost reduction and clear operational efficiencies. Investments being made are those seen as having an immediate impact on performance. Innovation no longer applies simply to products, but just as importantly to processes, both

internal (i.e., how companies plan, develop, make, and service) and external (i.e., how companies interact with customers).

PLM environments facilitate innovation on all fronts by providing clear, accurate, and valid information across the extended enterprise. In these environments, all those involved in the process have access to clear product definitions; therefore, collaboration—enabled broadscale by PLM—becomes the engine of innovation.

PLM solutions are typically segmented into “best-of-breed” or “platform” approaches. The former provide solutions based on a focus on engineering, product development applications, and specific processes, while the latter are typically thought of as part of integrated enterprise solutions, based on their common platforms, data, and applications.¹²

As such, organizations typically face three PLM implementation options:

1. PLM from an independent PLM supplier (best of breed)
2. PLM from an enterprise solutions provider (platform)
3. A hybrid PLM approach¹³

Commercial PLM solutions reflect the providers' different historical backgrounds. Typi-

cally available PLM solutions feature generic and pre-configured templates for data models and processes, and functions for specific domains of applications or industries. Their strengths include the management of CAD models and technical documents, the support of engineering releases and change processes, and strong integration with CAD, enterprise resource planning (ERP), and data systems.¹⁴

As the complexity of the market has risen, so has the potential of PLM overlapping or conflicting with projected or ongoing initiatives, and legacy investments. Therefore, aligning PLM with other enterprise initiatives is increasingly critical as the footprint of PLM expands. As it does, new battles between enterprise arenas are likely to emerge to the extent that PLM is not well aligned.

Core capabilities remain a central priority of PLM investment, but, as in other software sectors, companies are clamoring for “more for less,” including sophisticated sourcing and analytical tools. Some elements of PLM are becoming commoditized, something suppliers can leverage into their systems to expand functionality.

As comprehensive enterprise solutions continue to proliferate, PLM has emerged as one of the key strategic initiatives in many organizations. One reason for this: PLM successes have become visible at companies large, midsize, and small.

The Technology Landscape

The thrust to implement PLM across the extended enterprise has faced a number of challenges:

1. *Wider PLM implementations span more and broader functional groups.* This has required an increase in phased implementation and cultural change programs, and raised the premium on program and project management.
2. *Services take center stage.* Service support, historically secondary or tertiary in implementations, now is a critical element. Sources of support include partners, software suppliers, systems integrators, and internal resources. Effective coordination between these sources is critical, albeit often difficult.
3. *Hybrid approaches are gaining traction.* In the words of a leading industry consultant, "Enterprise PLM requires committing to both an overall vision and packaged steps."¹⁵ Different messages are required for different functional roles, and commitment in organizations must be both top-down and bottom-up.

The value of the PLM market in 2008 was estimated at \$27 billion, with growth rates

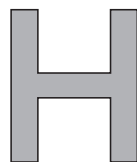
expected to slow from nearly 13% in 2008 to around 4.75% in 2010.¹⁶ Growth rates are expected to recover to somewhere between 7% and 8% by 2013.¹⁷ □

As comprehensive enterprise solutions continue to proliferate, PLM has emerged as one of the key strategic initiatives in many organizations.

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How to Evaluate Costs/ROI



ISTORICALLY, COMPANIES HAVE TARGETED PAYBACK OF THREE YEARS OR LESS FOR EFFECTIVE ROI ON PLM IMPLEMENTATIONS, BUT THE TOUGHER BUSINESS CLIMATE OF RECENT YEARS HAS REDUCED THIS EXPECTATION TO TWO YEARS OR FEWER.¹⁸

On the cost side, there are two basic areas of consideration: up-front costs (e.g., software configuration, data migration, licensing fees, employee training) and ongoing costs (e.g., system support, license renewals, and maintenance fees). These costs are not especially difficult for organizations to determine, but actual costs will vary according to the number of sites, users, and business functions entailed, among other factors.

Companies would do well to consider “soft costs,” such as the time spent by management teaching, leading, and encouraging staff, as PLM implementations get underway. According to analysts, these costs are typically underestimated.¹⁹ Primary among expected benefits—and criteria for evaluating ROI—are the following:

- ❑ Reducing engineering change orders to drive up productivity and reduce

time to market

- ❑ Lowering product costs; particularly during recent times, top-down benefits have taken a back seat to bottom-up benefits such as cost reductions
- ❑ Improving quality and regulatory compliance

In addition to costs and benefits, risks must be calculated to assess the overall value of PLM implementations. Studies have shown that key risks include scope creep (i.e., burgeoning costs due to extending the footprint of PLM within the enterprise) and misalignment with business goals.

The integration of PLM with other enterprise applications is a definite trend. Integrating PLM applications across the enterprise allows organizations to:

- ❑ Share and reuse product definitions across virtually all aspects of the enterprise
- ❑ Align their systems and processes internally with those of partners, suppliers, dealers, and service providers
- ❑ Make product information more easily available across systems
- ❑ Automate business procedures prone to human error.²⁰

Research conducted by CIMdata reported multiple benefits of integrating PLM and ERP systems, including 75% reduction in the time, cost, and errors associated with re-keying data entry from one system to another; 75% reduction in bill-of-materials error costs; 15% reduction in inventory cost; and 8% reduction in scrap materials.²¹

The integration of PLM and ERP can significantly improve the productivity and effectiveness of users and organizations working with product- and plant-related information. These two enterprise domains cover many of the critical functions required to develop, test, manufacture, deliver, use, and support a product throughout its life, and integration of PLM and ERP can deliver significant benefits for companies of all sizes.²²


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In addition to costs and benefits, risks must be calculated to assess the overall value of PLM implementations.

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How to Evaluate Costs/ROI

A recent study conducted by AMR/Gartner shows the typical range of PLM cost, based on a multimillion dollar-investment plan with deployments being supplier-facing, customer-facing, or internally oriented.²³ 

PLM Costs	High	Average	Low
Core PDM, per user seat license (net)	\$6,000	\$2,600	\$500
Implementation Costs (multiple of software)	2X	1X	0.5X
Maintenance Costs (per year, percentage of license)	22%	18%	12%
ADDITIONAL COSTS			
Database Licenses	\$200K	\$125K	\$50K
Internal Allocations (multiple of SW)	3X	2X	1X
SPECIALTY APPLICATIONS (per deal)			
Product Portfolio Management	\$1.5M	\$500K	\$50K
Implementation Costs (multiple of SW)	2X	1X	0.5X
Component Supplier Management	\$2M	\$500K	\$100K
Implementation Costs (multiple of SW)	4X	3X	0.5X
Configurators	\$3M	\$600K	\$120K
Implementation Costs (multiple of SW)	4X	2X	1X

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How to Evaluate Vendors

Manufacturers should develop a business case that carefully ties the software strategy to the strategy of the business as a whole.

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LM IS A MUCH MORE DIVERSE PLATFORM THAN ENTERPRISE APPLICATIONS SUCH AS ERP OR SUPPLY CHAIN MANAGEMENT (SCM), MAKING IT MORE DIFFICULT TO COMPARE PLM SYSTEMS. Given the broad scope of PLM, few providers cover the full range of functionality. Certain vendors and solutions are better suited for different aspects of a product's lifecycle.²⁴

PLM providers from the 3D design space (e.g., Dassault Systèmes, PTC, Siemens PLM Software) offer platforms optimized for processing, managing, and controlling data such as 3D CAD files. These vendors make sense when a company's "pain points" are around engineering collaboration.

If the corporate process in need of the most attention is supplier collaboration, sourcing, or efficiencies in manufacturing, PLM platforms from enterprise platform providers such as SAP or Oracle may make more sense.

One expert says the primary PLM vendor should support your biggest problem. Choose the vendor that can fill in some of the other gaps as well; however, don't ignore your pri-

mary business problem for the sake of getting a full suite. You could end up with a lot of breadth, but little depth.²⁵

PLM systems provide a foundation for companies to compete in innovation-driven environments demanding lower costs, rapid time-to-market, collaboration across the supply and demand chains and within the extended enterprise, high product quality, and regulatory compliance. As these systems are far more extensive than standalone CAD or product data management (PDM) systems, they reach into multiple aspects of a business, and across multiple organizations. For smaller companies, selecting the right solution can be a greater challenge due to limited resources available for the evaluation process.

In many instances, selecting a PLM system is done at too low a level, with less than adequate consideration of strategic corporate issues, little understanding of the product development environment and of proposed improvements to that environment, and poorly conceived ideas of ROI or evaluation metrics.²⁶

Selection should start with business objectives in mind, and manufacturers should develop a business case that carefully ties the software strategy to the strategy of the business as a whole. Without this alignment, the selection process may be skewed to the tech-

nical merits of the software system, avoiding evaluation criteria that are critical to successful implementation and realization of ROI.²⁷

A number of logical steps are essential to the vendor evaluation and implementation process:

1. Determine the need
2. Assess where the company should be
3. Organize the evaluation
4. Determine management requirements
5. Determine technical requirements
6. Determine integration requirements
7. Evaluate potential vendor partners
8. Select a system and vendor partner
9. Implement and monitor the strategy²⁸

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How to Evaluate Vendors

It is important that vendors be evaluated based on requirements and product demonstrations. Vendors' responses to questions will help eliminate them or strengthen their cases. Minutes of meetings should be prepared, and vendors should be required to sign them. This will prevent false claims and make them accountable in case of failure to deliver promised results.

Check for successful PLM implementations by the vendor. Before making the final call, visit and consult companies where the selected PLM package has already been implemented. If the solution is working as expected in those companies, it will reinforce confidence in the selection. However, if issues are identified during this review, the purchase decision should be reconsidered.

Throughout the vendor evaluation and implementation process, conclude each step with the consensus of all members of the selection committee, including end-users, to gather enterprise-wide acceptance for the PLM package. □

Vendor Name	Product Names	Functional Range	Industries Served	Size of Business Served	Databases Supported	Platforms Supported	Delivery Mode
Aras Corp.	Aras Innovator	Includes global product development, new product introduction, configuration and change management, design anywhere/build anywhere, supplier collaboration, outsourced engineering and manufacturing, advanced product quality planning, regulatory compliance	Aerospace and defense, automotive, consumer goods, education, energy, food and beverage, government, high-tech, industrial, medical devices, pharmaceutical	Midsized and large	Microsoft SQL Server	Microsoft Windows.NET	On-premises, cloud/SaaS
Arena Solutions	Arena	Bill of materials (BOM) mgt., engineering change mgt., supplier/partner collaboration	Discrete manufacturing, especially high-tech, consumer products, clean technology, medical devices	Small, midsize, and large	n.a. (SaaS)	n.a. (SaaS)	SaaS
Autodesk	Autodesk Solution for Digital Prototyping	Conceptual design; engineering; simulation; visualization; injection mold design; product data management and collaboration; design, visualization, and simulation of factory layout and operations	Automotive and transportation, consumer products, building products and fabrication, industrial machinery	Small, midsize, and large	Microsoft SQL Server	Microsoft Windows 7, Vista, XP Professional; Mac OS	Desktop (with SaaS options via Autodesk Labs)
Centric Software	Centric 8	Line planning, storyboarding, trend management, product specification, material mgt., sample mgt., lab dips, calendar, workflow, sourcing, vendor compliance, costing, purchase orders	Apparel, footwear, fast-moving consumer goods	Small, midsize, and large	Microsoft SQL Server, Oracle	Microsoft Windows; Mac OS, iPhone, iPad	Microsoft SQL Server, Oracle

Vendor Name	Product Names	Functional Range	Industries Served	Size of Business Served	Databases Supported	Platforms Supported	Delivery Mode
Dassault Systèmes	V6R2011	CAD/design, embedded systems design/simulation, enterprise data mgt., business process mgt., enterprise collaboration and visualization, digital mfg. and planning, realistic scientific simulation, product documentation	Automotive, aerospace and defense, life sciences, high-tech, business services, consumer packaged goods, consumer goods/fashion, shipbuilding, construction, energy, industrial equipment	Small, midsize, and large	Microsoft SQL Server, Windows, MySQL; AIX; Oracle; Linux; HP-UX	Microsoft Windows 7, Vista, XP; Mac OS	On-premises
Infor	PLM 8, PLM Optima, PLM Runtime QT	Includes product data mgt., vendor collaboration, engineering change/workflow mgt., document mgt., BOM mgt., CAD integration, ERP integration	Discrete manufacturing, process manufacturing	Small, midsize, and large	Microsoft SQL Server, Oracle	Microsoft Windows 7, Server, FoxPro	On-premises
Omnify Software	Omnify Empower PLM	Part-data mgt., BOM mgt., BOM routing, engineering change mgt., document mgt., quality/CAPA mgt., project mgt., training records mgt., compliance mgt.	Electronics, mechanical, medical, defense	Small and midsize	Microsoft SQL Server	Microsoft Windows	On-premises
Oracle	Agile Product Lifecycle Management	Manages information, processes, and decisions about products throughout their lifecycles and across the global product network	All industries	Midsize and large	Microsoft Windows, Oracle	Microsoft Windows Server, AIX, Oracle, Linux, HP-UX	On-premises, on-demand, or hybrid

Vendor Name	Product Names	Functional Range	Industries Served	Size of Business Served	Databases Supported	Platforms Supported	Delivery Mode
PTC	Windchill, Creo, Arbortext, InSight, Relex, Mathcad	Collaborative product data mgt., CAD/CAM, visualization, product and service information mgt., program portfolio mgt., social product development, environmental compliance and quality mgt.	Aerospace and defense, automotive, high-tech, electronics, industrial equipment, CPG, life science	Small, midsize, and large	Microsoft SQL Server, Oracle	Microsoft Windows 7, Vista, Server; AIX; Solaris; Linux; HP-UX; Java; Web	On-premises desktop and server software, SaaS through hosting partners
SAP AG	SAP Product Lifecycle Management	Master data mgt.; BOM; collaboration; compliance and QM; idea, requirements, and portfolio and project mgt.; integration with ERP	All discrete industries, CPG, and process industries	Midsize and large	Microsoft SQL Server, Oracle	Microsoft Windows Server, AIX, Solaris, Linux, HP-UX	On-premises
Siemens PLM Software	Teamcenter	Includes BOM, collaboration, compliance mgt., content and document mgt., engineering process mgt.	Aerospace and defense, automotive, consumer goods, energy, food and beverage, government, high-tech, and others	Small, midsize, and large	Microsoft SQL Server, Oracle, IBM DB2	Microsoft Windows, Linux, Unix	On-premises
Think3	TD PLM (Web-based), ThinkPLM (client-server)	EDM and PDM mgt., BOM, document vaulting, enhanced entity classification, component mgt., automatic PDF creation, electronic change mgt., task planning, job border workflow and signoff	Electronics, appliances, consumer goods, automotive and transportation OEMs	Small, midsize, and large	All	Microsoft Windows	On-premises, Web-based

Vendor Profiles

Selected Suppliers of Product Lifecycle Management

(In alphabetical order)

Aras Corp.

Aras was founded in 2000 by CEO Peter Schroer. Aras provides the market with a PLM solution suite called Aras Innovator that uses an enterprise open-source business model.

Aras Innovator's PLM suite includes bill of materials, CMII configuration management, engineering change workflows, document management, CAD/EDA integrations, product costing, NPDI, stage-gate/phase-gate dashboards, program project management, quality compliance, and other functionality. The software has a model-based, service-oriented architecture for scalability and other benefits.

Arena Solutions

Also founded in 2000, Arena Solutions is headed by CEO Craig Livingston. Arena bridges the gap between design and manufacturing, unifying teams around product information. Arena provides on-demand software for capturing product data, controlling revisions, managing the engineering change process, and sharing accurate, up-to-date bills of materials (BOMs) with partners, suppliers, and contract manufacturers.

As a repository for the product record, Arena connects with systems such as CAD, EDA, PDM, and ERP, and links organizations with their supply chains. Arena takes an on-demand SaaS approach to provide functionality to its customer base.

Autodesk

Autodesk, founded in 1982, is led by CEO Carl Bass. It has annual revenues of \$1.7 billion.

Autodesk is a leader in 3D design and sells more than 80 products. Its PLM product is called Autodesk Solution for Digital Prototyping. The software allows manufacturers to conceptualize, model, and test designs before they are built, bringing together data from all phases of the development process into a single digital prototype. Autodesk Solution for Digital Prototyping also manages product data creation, simulation, and documentation processes throughout the product lifecycle.

Centric Software

Founded in 1998, Centric Software is led by CEO Chris Groves. Centric Software focuses on PLM for consumer goods and other industries. The company has thousands of customers in several industries.

Centric Software's PLM offering is called Centric 8. The package incorporates a wide range of functionality in one platform that is delivered on both desktop and mobile devices.

Dassault Systèmes

Dassault Systèmes, founded in 1981, has 115,000 customers in 80 countries. The company had sales of more than \$1.7 billion in 2009. Dassault Systèmes is led by CEO Bernard Charlès.

Dassault Systèmes' PLM product is V6R2011. The package includes advancements in systems functionality and content, such as various automotive-focused Modelica libraries, as well as Lifelike Human and Lifelike Conveyor. V6R2011 also updates Dassault Systèmes' PLM Express offering with new attributes for the midsize market.

Infor

Founded in 2002, Infor, a privately held company, is led by CEO Charles Phillips. The company's revenues are approximately \$2 billion annually.

Infor offers three PLM products that are used by approximately 70,000 customers. Infor's PLM product line consists of PLM 8, PLM Optiva, and PLM RunTime QT. Each product serves different industries. PLM 8 is designed for discrete manufacturing. For process manufacturers, Infor provides PLM Optiva, while PLM RunTime QT is meant for the style, apparel, footwear, and textile industries.

Omnify Software

Omnify Software, incorporated in 2002, is a privately held company led by CEO Chuck Cimalore. The company provides PLM software to the electronics, mechanical, medical, and defense industries.

Omnify's PLM offering, Empower PLM, is

Vendor Profiles

Selected Suppliers of Manufacturing Execution Systems

designed for small to midsize manufacturers, yet is scalable to meet the needs of larger enterprises. It has been successfully installed in numerous manufacturing companies with thousands of users. The Omnify Empower PLM product provides a central location for members of design and manufacturing teams to share information for designing, manufacturing, and supporting products.

Oracle

Oracle, founded in 1977, is headed by Lawrence J. Ellison as CEO. The company's revenue for fiscal year 2010 was \$26.8 billion. Oracle serves 370,000 customers globally across a wide range of industries, including aerospace and defense, communications, engineering and construction, financial services, health sciences, insurance, oil and gas, retail, tax, and utilities.

Oracle's Agile Product Lifecycle Management suite of PLM software helps companies deal with innovation, costs, quality, and regulatory compliance by managing the information, processes, and decisions about products throughout their lifecycles and across the global product network.

PTC

Established in 1985, PTC had fiscal 2010 revenues of approximately \$1 billion. Led by President and CEO James Heppelmann, PTC delivers a portfolio of PLM products to customers in a wide variety of industries. In

the PTC PLM software environment, management and collaboration are integrated with regulatory compliance, product quality and documentation, and service information.

SAP AG

Founded in 1972, SAP AG is the world's largest business software company. Its 2009 revenues were more than €10.6 billion. The company has more than 95,000 customers in over 120 countries. Bill McDermott and Jim Hagemann Snabe are co-CEOs.

SAP's PLM application provides 360-degree support for product-related processes. SAP PLM is part of the SAP Business Suite, which gives organizations the ability to perform essential business processes with modular software that is designed to work with other SAP and non-SAP software.

Siemens PLM Software

Founded in 1963 as United Computing, Siemens PLM Software is now a business unit of the Siemens Industry Automation Division. The company, led by CEO Tony Affuso, provides PLM software and services to more than 63,000 customers.

Siemens PLM Software's PLM offering is called Teamcenter. The software helps facilitate innovation and improves productivity by connecting people across global product development and manufacturing organizations with product and process knowledge.

Think3

Founded in 1979, Think3 joined the Versata family of software companies in 2010. Think3, led by CEO Scott Brighton, operates as a standalone company with its own line of software products. The company serves more than 11,000 customers.

Think3's PLM offerings, TD PLM (Web-based) and ThinkPLM (client-server), are designed to serve mechanical and industrial design clients. The software manages product and lifecycle information throughout the development process, from concept and engineering through realization and maintenance. □

Footnotes

Product Lifecycle Management Buyer's Guide

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