



PLM Market Growth in 2008

“A First Look in 2009—Weathering the Storm”

April 2009

A CIMdata White Paper

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Even in the face of an economic slump, financial uncertainty, and a harsh business climate, PLM investments continued to grow in 2008. According to recent statistics compiled by CIMdata, the Comprehensive PLM market experienced an 8% growth in 2008 with all sectors showing increases. Surprisingly, these increases fell only slightly short of earlier expectations, primarily because of a robust start for PLM investments in the first half of the year. Only in the last quarter did the market slow appreciably, which will undoubtedly continue in 2009 until the economy turns around significantly. Nevertheless, a wide range of companies are investing in PLM to achieve short-term benefits as well as long-term strategic value throughout the product lifecycle and across their extended enterprise. Indeed PLM may be one of the major deciding factors in determining which companies are able to weather the current economic storm and be in the best competitive position when global markets rebound.

Moreover, a widening range of industries are utilizing PLM, including both traditional industries such as automotive, high-tech electronics, and aerospace and defense, as well as companies that have not historically been major PLM investors, such as food and beverage, retail and apparel, financial and investment services, and government. Additionally, a renewed focus on PLM is taking place in areas such as utilities, petrochemical, construction, and infrastructure.

Short-Term Priorities and Long-Term Strategies

In the current economic climate, many companies are primarily focused on the bottom-line benefits of PLM for controlling costs and improving operational efficiencies. The emphasis at these organizations is toward quick value and bite-sized investments that will provide the fastest impact. CIMdata research of companies that have implemented PLM solutions indicates that typical ROIs can be substantial and contribute heavily toward whether the company is able to effectively compete and even survive in today's economy.

Even as these short-term priorities dominate the current market, long-term strategies still continue at many companies that are focusing on using PLM to best position

themselves competitively for when the world emerges from the current economic chaos. Long-term drivers for PLM continue to be focused on initiatives that are critical for business success, including harmonizing global processes, managing the increased complexity of products and value chains, and improving competitiveness and pricing structures by improving product quality and lowering costs.

Business Value of PLM

CIMdata defines PLM as not just a set of technologies, but 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 from concept to end of life—integrating people, processes, business systems, and information. In this way, PLM forms the product information backbone for a company and its extended enterprise.

As a strategic enterprise investment, PLM is rapidly extending beyond engineering design to a broader range of business functions—from early-stage product strategy development and planning, to product engineering and manufacturing engineering, and through to product maintenance and support. The impact of the PLM footprint expansion is that many diverse, previously-isolated disciplines and pockets of automation are now being tightly integrated and efficiently coordinated through comprehensive PLM solutions. These solutions allow various groups to collaborate more effectively and work more efficiently, leveraging corporate-wide product knowledge.

The tremendous business value in such an integrated, end-to-end environment is that processes are optimized not for individual departments or groups, but for the entire enterprise and across the full product lifecycle—planning products that fit into the company's business, and developing product designs that meet those plans and that can be effectively built, sold, and supported. With that broad view and overall optimization of processes, companies operate more efficiently, get to volume production faster, improve quality and product performance, and have the ability to design more innovative products.

Considering the far-reaching corporate business impact of implementing such an expanded PLM strategy, the approach has become a critical enterprise investment. PLM is widely-regarded as a necessity in a turbulent global economy where companies leveraging it as part of their corporate strategy will likely be among the top performers in the coming years as the economy improves.

PLM Market Performance and Forecast

CIMdata's PLM market analysis provides two perspectives on PLM:

- *Comprehensive PLM*—covers the full product definition over the entire product lifecycle and across all industrial industries. This includes mechanical, electronic, and software components, as well as both discrete and process industries.
- *Mainstream PLM*—covers a subset of the Comprehensive PLM market, but includes the subsectors that have traditionally been addressed by the major suppliers (i.e., drivers) of the PLM market.

The increase in Comprehensive PLM did not meet initial forecasts for the second half of 2008 primarily as a result of a slowdown in new license sales. However, services provided strength as companies continued to sustain ongoing programs. PLM investments are forecasted to continue growing over the next five years; however, 2009 and 2010 growth will be much slower than that in previous years. CIMdata forecasts Comprehensive PLM growth to increase at a compound annual growth rate of approximately 6.3% and expanding the market size to nearly \$36 billion by 2013 (as shown in Figure 1). Much of the growth in 2009 and early 2010 will be driven by services.

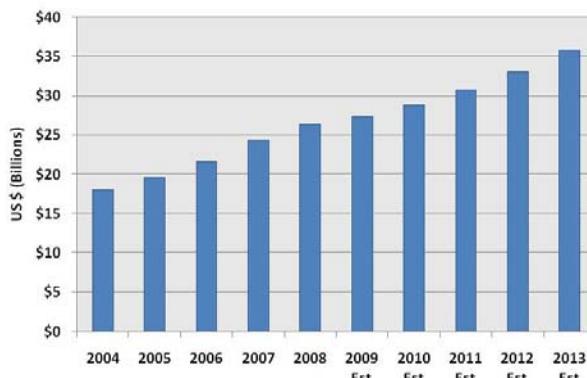


Figure 1—Comprehensive PLM Market Growth History and Forecast (Estimated for 2009 to 2013)

The estimates in Figure 2 include both Software (License + Maintenance) and Services

Mainstream PLM growth, although anticipated to be slower in 2009-2010, is expected to continue its climb over the next five years, increasing at a compound annual growth rate of just over 7% and expanding the market size to just under \$24 billion by 2013 (as shown in Figure 2).

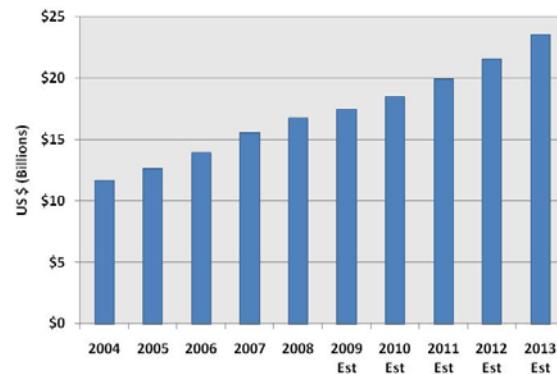


Figure 2—Mainstream PLM Market Growth History and Forecast (Estimated for 2009 to 2013)

The estimates in Figure 1 include both Software (License + Maintenance) and Services

PLM Market Categories

CIMdata segments the overall PLM market into three major sub-sectors:

- *PLM Tools* that create intellectual assets through authoring, analysis, modeling, simulation, and documentation of product and plant/facility information.
- *collaborative Product Definition management (cPDM)* applications and solutions to capture, manage, disseminate, visualize, and collaborate on product-related intellectual (digital/virtual) information, including related processes.
- *Digital Manufacturing systems* for process planning, resource definition, factory floor layout, and product flow simulation and analysis—including ergonomics.

Historically, the Tools sector has received the largest amount of investment, although growth of that sector has consistently been slower than that for cPDM. Industry investments in Tools were again above forecasts in 2008, although that was heavily influenced by growth in a few sub-sectors. According to CIMdata, \$17.3 billion was spent in 2008 by companies worldwide on PLM Tools such as mechanical computer-aided design (MCAD), computer-aided manufacturing (CAM), electronic design automation (EDA), engineering simulation and analysis, architecture/engineering/construction (AEC), technical

publishing, and others. The Tools portion of the PLM market is forecasted to grow at a CAGR of 5.1% over the next five years to reach \$22.1 billion by 2013.

The fastest-growing sector of PLM is for expenditures on cPDM, which covers technologies and approaches such as PDM, collaboration and visualization, data exchange, portfolio management, compliance management, strategic sourcing, enterprise application integration, workflow, functional applications such as configuration management, and solutions for specific industries or businesses. CIMdata research indicates that the cPDM portion of the PLM market fell short of forecasted growth for 2008 but still reached \$8.2 billion, representing an increase of approximately 8.9% over 2007. Although slower growth is expected in 2009, the cPDM segment is expected to continue its strong growth to exceed \$12 billion by 2013 for a CAGR of 8.6% (as shown in Figure 3).

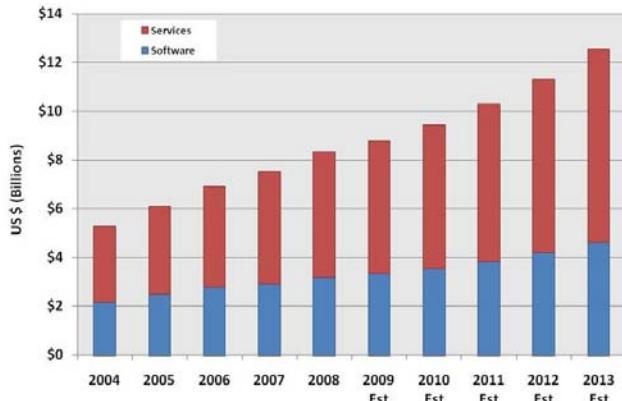


Figure 3—cPDM Market Growth History and Forecast
(Estimated for 2009 to 2013)

The Digital Manufacturing segment of PLM increased more than 9% for a total of \$530 million in 2008, according to CIMdata statistics, and met previous growth expectations. This segment is expected to have an 8.3% compound annual growth rate over the next five years (5% growth forecasted for 2009) and exceed \$750 million by 2013. Digital Manufacturing is a key point of integration between PLM and factory automation equipment such as PLCs and transfer lines, and many of the long-term benefits from PLM are not achieved without incorporating a comprehensive Digital Manufacturing strategy.

Supplier Rankings

While there are many companies participating in the PLM market, a few have distinguished themselves as “PLM Mindshare Leaders.” These companies are typically considered to be at the forefront of the market in terms of either revenue generation or thought leadership. With broad-based capabilities that support a full product lifecycle-focused solution, the group of PLM Mindshare Leaders for 2008 includes Dassault Systèmes, Oracle, PTC, SAP, and Siemens PLM Software. Rankings and statistics in subsequent figures reflect the ongoing consolidation within the PLM industry as it matures.

All of the mindshare PLM suppliers sell some or all of their products and services through their own field sales and support organizations. This is their core or direct revenue. Each also has an increased market presence associated with consultancies, systems integrators, value-added resellers, and other partners that sell and provide services based on the mindshare leaders’ technologies and products. The combined core and partner revenues can greatly expand the visibility and impact of a supplier in the industry, generating a significant market footprint. Based on these combined revenues, the global PLM market presence (no double-counting of revenues and royalties) for the PLM Mindshare Leaders is shown in Figure 4.

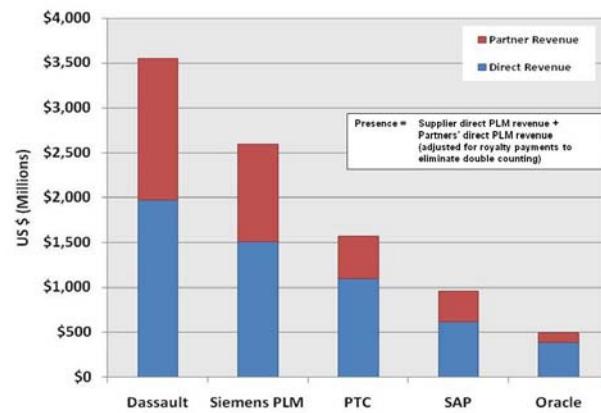


Figure 4—PLM Mindshare Leaders’ Presence 2008
(Market presence information represents CIMdata estimates)

Dassault Systèmes was the PLM market presence leader in 2008. The revenue generated by IBM’s Dassault-based PLM services business is a significant contributor to Dassault’s market presence. Siemens PLM Software, PTC, and SAP also exhibited strong and growing partner programs in 2008, and these provide a positive impact on their overall market presence as well. Direct PLM-based revenues from these mindshare leaders are shown in Figure 5.

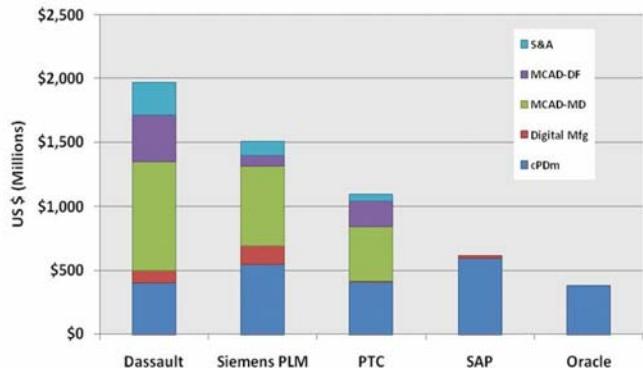


Figure 5—PLM Mindshare Leaders’ Direct Revenues 2008
(Revenue information represents CIMdata’s estimates)

Dassault Systèmes was again the PLM mindshare direct revenue market leader in 2008. Siemens PLM Software and PTC generated the second- and third-highest PLM revenues respectively, with all of the mindshare revenue leaders having good growth during the year. Note that for the top three suppliers, a significant portion of their PLM revenues were generated from the Tools portion of their product suites (i.e., their mechanical design automation offerings). However, their cPDm revenues are growing faster than their Tools revenues and are becoming a larger portion of their overall business.

Each year, PLM-related technologies and services are provided by more companies representing all sectors of the PLM industry. To illustrate this growing and wide range of companies that participate in the overall PLM market, the suppliers of PLM-related solutions that derived the most revenues from the market are shown in Figure 6. As can be seen from the companies shown, many of these companies do not compete with each other, but focus on a variety of different aspects of PLM. In many cases, these suppliers are partners in provided more complete solutions to the PLM market.

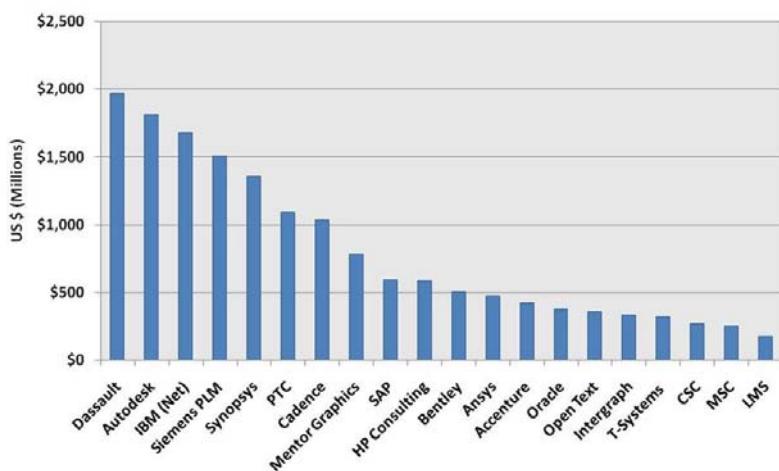


Figure 6—Overall PLM Direct Revenue Leaders 2008
(Revenue information represents CIMdata’s estimates)

Reinforcing the growing strength of the PLM market, there are seven companies with revenues of more than \$1 billion as seen in Figure 6.

A Wide Range of cPDm Providers

A widely-diverse group of suppliers provide cPDm solutions and services. However, the same PLM mindshare leaders are also the mindshare and market presence leaders for the key cPDm sector of the PLM market. CIMdata’s analysis of cPDm market presence for the PLM mindshare leaders is shown in Figure 7 and illustrates the impact that partner revenue has on a supplier’s cPDm PLM footprint.

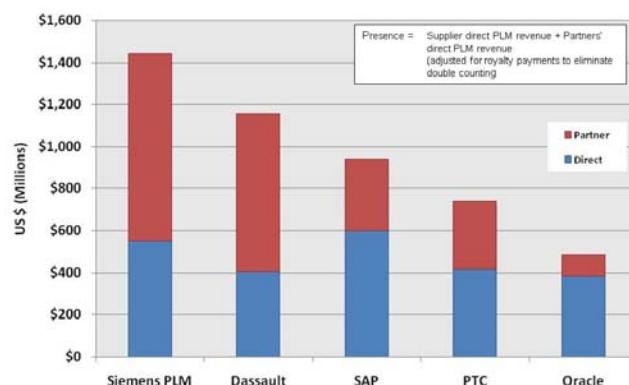
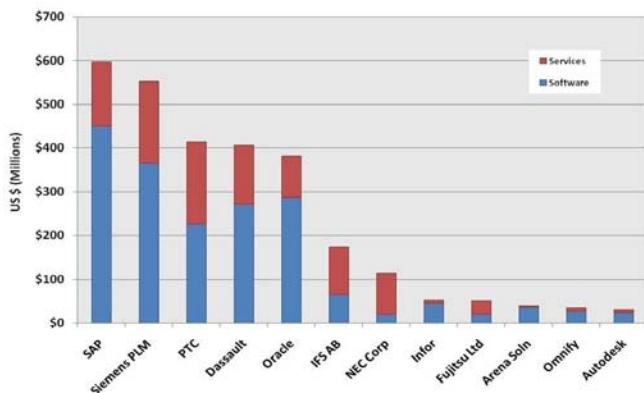


Figure 7—cPDm Market Presence Leaders 2008
(Comprehensive Technology Suppliers Only)
(Market presence information represents CIMdata’s estimates)

Siemens PLM was again the cPDm market presence leader for 2008, with both significant direct revenues and strong partner revenues from HP Consulting and its other partners. Dassault Systèmes was second with IBM generating the significant portion of its partner revenues, followed by SAP, PTC, and Oracle respectively.

As can be seen in the Figure 8, the leader in cPDm-only direct revenues for 2008 was SAP, which continues to generate substantial cPDm revenues by selling within its installed base. All of the vendors shown in Figure 8 had growth in 2008 as adoption of cPDm solutions as part of PLM strategies continues to grow. As can be seen in the figure, many of these organizations generate a substantial portion of their revenues through services.



**Figure 8—cPDm Direct Revenue Leaders 2008
(Comprehensive Technology Suppliers Only)**
(Revenue information represents CIMdata's estimates)

All Sectors Continued to Grow

Looking deeper into the fast-growing cPDm sector of the overall PLM market, CIMdata statistics indicate that cPDm growth continued in all industry and geographic sectors for 2008, with 37.5% of PLM business from the Americas, 39.5% from EMEA (Europe, Mid-East and Africa) and 23% from the Asia Pacific region. Asia-Pacific was dominated by Japan, while continued investment by solution providers in China and other AP countries helped increase growth across the region during 2008 and will drive growth in the coming years (see Figure 9).

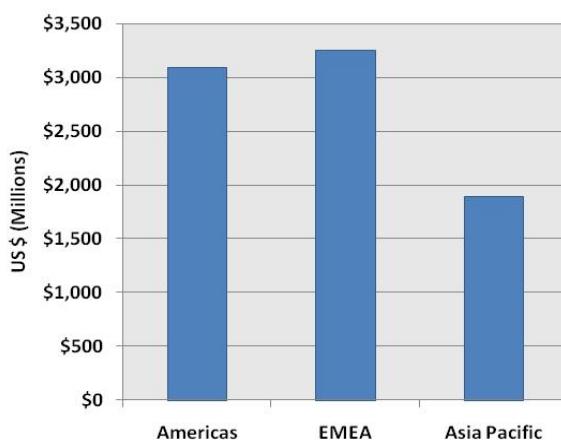


Figure 9—cPDm Geographic Revenues 2008
(Distribution based on CIMdata revenue estimates)

As shown in Figure 10, companies in a wide range of industry segments invest in cPDm. Automotive and high-tech continue to be the largest cPDm adopters in 2008. Aerospace and defense (A&D) and Fabrication and Assembly (F&A), which includes white goods, machine

tools, retail and apparel, and others, had solid revenues. All process industry sectors had solid growth. This includes consumer-focused process industries (consumer packaged goods, food and beverage, and pharmaceuticals), petrochemical, and utilities. The 'Other' category (insurance, financial services, etc.) showed increasing adoption of PLM by those non-traditional industries. This across-the-board growth demonstrates the universality of PLM in providing business value across such a diverse spectrum of industries.

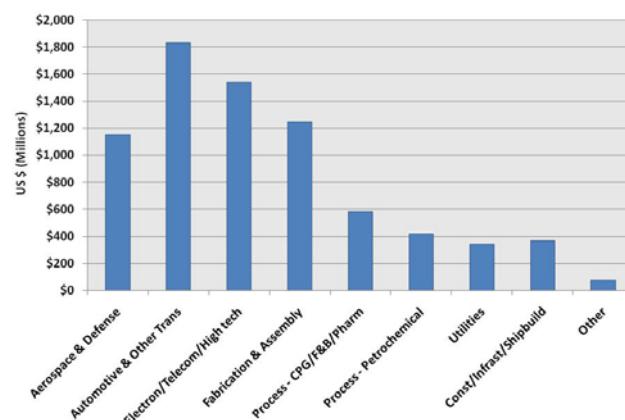


Figure 10—2008 cPDm Industry Segment Revenues
(Distribution based on CIMdata revenue estimates)

Future Outlook

The PLM market remains robust and will continue to have solid growth over the forecasted period (2009 through 2013) as companies continue to invest in solutions that can provide them with a sustainable business advantage and profitability. The cPDm sector of the PLM market will be the fastest-growing segment as companies invest to better leverage product and plant information across the lifecycle from concept, through manufacturing, to service and operation. Evolution of PLM's definition and scope will continue to fuel growth in both software and services as PLM becomes more important and embedded within a business' overall enterprise.

About CIMdata

CIMdata, a leading independent worldwide firm, provides strategic consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of Product Lifecycle Management (PLM) solutions. Since its founding more than 25 years ago, CIMdata has delivered world-class knowledge, expertise, and best-practice methods on PLM solutions.

These solutions incorporate both business processes and a wide-ranging set of PLM enabling technologies.

CIMdata works with both industrial organizations and suppliers of technologies and services seeking competitive advantage in the global economy. CIMdata helps industrial organizations establish effective PLM strategies, assists in the identification of requirements and selection of PLM technologies, helps organizations optimize their operational structure and processes to implement solutions, and assists in the deployment of these solutions. For PLM solution suppliers, CIMdata helps define business and market strategies, delivers worldwide market information and analyses, provides education and support for internal sales and marketing teams, as well as overall support at all stages

of business and product programs to make them optimally effective in their markets.

In addition to consulting, CIMdata conducts research, provides PLM-focused subscription services, and produces several commercial publications. The company also provides industry education through PLM certificate programs, seminars, and conferences worldwide. CIMdata serves clients around the world from offices in North America, Europe, and Asia Pacific.

To learn more about CIMdata's services, visit our website at www.CIMdata.com or contact CIMdata at: 3909 Research Park Drive, Ann Arbor, MI 48108, USA. Tel: +1 (734) 668-9922. Fax: +1 (734) 668-1957; or at Siriusdreef 17-27, 2132 WT Hoofddorp, The Netherlands. Tel: +31 (0)23 568-9385. Fax: +31 (0)23 568-9111.

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