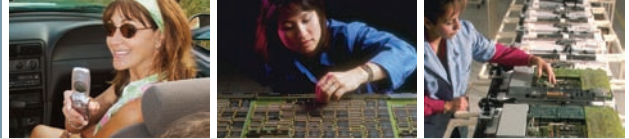# Six critical success factors for PLM deployment

What high tech and electronics companies need to know to achieve success

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▶ Leading high tech and electronics companies are deploying product lifecycle management (PLM) to manage the development of highly innovative and margin-sensitive products that are required to succeed in an increasingly competitive and distributed global marketplace. Six critical architecture factors determine the ability of today's PLM solutions to facilitate business success. This executive white paper summarizes these factors, balancing both the short term and long term requirements that a deployed PLM solution will need.

# PLM Software

Answers for industry.

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High tech and electronics companies continue to be squeezed by aggressive price points, product design complexities, regulatory requirements and technological change. They must develop and deliver highly innovative, timely and cost competitive products that can succeed in a distributed global marketplace.

Product lifecycle management (PLM) plays a crucial role in enabling high tech and electronics companies to meet these goals. Successfully deployed PLM solutions ensure that companies are able to capture, implement, develop and maintain the complex products that the high tech and electronics market requires.
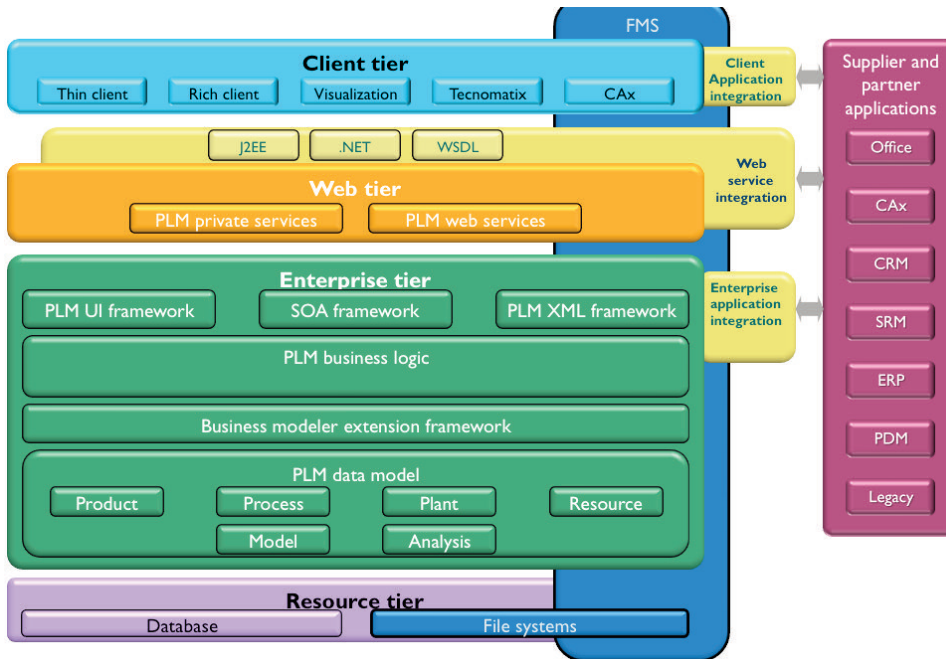
As the following table indicates, in addition to having the right solution capabilities, six crucial architectural factors are required to deploy a successful PLM solution to meet the needs of today's high tech and electronic industry.

Large enterprises require a PLM system that is able to balance both long-term and short-term business needs. High tech and electronics companies are especially driven by the need to choose a PLM system whose architecture can future proof their investment – as well as deliver proven PLM capabilities that deliver immediate business value.

Individual PLM capabilities should not be sacrificed at the expense of one another or for the system overhead they might incur. Best-in-class PLM systems are able to accommodate multiple business demands. They are able to deal with increasing levels of complexity – including the use of more and more applications – without raising overall deployment and maintenance costs. Just as importantly, they can effectively integrate all of the end-to end capabilities required to meet today's high tech and electronics business needs – including the need to deliver an innovation platform capable of empowering ubiquitous PLM.

To learn more about what distinguishes a best-in-class PLM system, see "The Value of Unified Architectures for PLM: Harmonizing the Environment," *A CIMdata Topic Review*, August 2008.

Crucial factors for successful PLM deployment

Factor	Requirement
State-of-the-art architecture	PLM architecture must reside on top of computing platform building blocks that include a database, file system, user interface, integrated development environment (IDE), network protocols and storage. Not all PLM architectures are the same. Today's companies need a state-of-the-art PLM architecture that takes advantages of the latest protocols and best practices. A modern architecture is capable of delivering **a simplified PLM platform** that can support end-to-end product innovation on a future-oriented basis, while also providing the overall enterprise IT infrastructure needed to facilitate **harmonized co-existence.**
Usability	A "one user interface fits all" approach does ***not*** work when it comes to meeting the usability needs of PLM constituencies. User communities with different experiences and business roles will be using PLM. The environment for a successful solution must provide a unified foundation with the following capabilities to address four user experiences. • Access through integrated authoring tools, including Microsoft Office and MCAD and ECAD design tools • A familiar web browser that users already know and understand • Task and role-based portals that organize information in the context of the user community's business and assignment needs • A rich client interface to create and manage product and process data across various lifecycle states
Scalability and performance	Large enterprises need to scale their chosen PLM environment to support changing user workloads and optimize system performance accordingly. Successful solutions need to support three levels of scalability: • *Horizontal scalability*, which connects multiple servers and PLM data instances in a 4 tier architecture • *Vertical scalability*, which optimizes performance as the PLM solution is scaled for larger user workloads • *Global scalability*, which enables the chosen PLM solution to handle large files through a sophisticated caching mechanism; global scalability also optimizes the PLM environment for global performance while enabling it to efficiently utilize a complex network topology comprised of wide area network (WAN) connections
Secure and controlled access	The PLM solution should provide the entire enterprise with a single source of product and process knowledge whose access can be secured and controlled on the basis of: • *User metadata*, which controls who is able to access the PLM environment • *Object metadata*, which controls what product and process knowledge can be accessed • *Control lists*, which determine who is able to access what kind of data • *Rules-based engine*, which controls who can grant access to what data and when Today's PLM solutions must enable approved value chain partners to participate in product development processes while protecting intellectual properties of all participants. A rules-based engine is especially valuable since it can be leveraged to establish multiple levels of access controls to assigned and owned data.

Crucial factors for successful PLM deployment *continued*

Factor	Requirement
Deployment flexibility	The network latency, network bandwidth and the unpredictable reconfiguration of value chains necessitate a flexible approach to PLM deployment.
	Large enterprises need a PLM architecture that supports a range of deployment options so that they can implement a future-proof PLM solution in an enterprise environment commensurate with IT budget constraints. The PLM architecture should be able to support at least three deployment paradigms, including peer-to-peer, centralized and a lead site with satellite sites.
	Equally important, large enterprises must be able to *federate* product and process knowledge in three ways, enabling users to collaborate: • Using PLM product and process data from the same or different logical data models within the same firewall • Using data from the PLM system with other enterprise applications and legacy systems • Using PLM data from partners' PLM systems
Cost effective extensibility	No single PLM solution controls all of the information required to support every application need. Similarly, all PLM systems will require some configuration to support business-specific processes. Today's most effective PLM systems will support company-specific needs without requiring extensive customized programming.
	With this in mind, the PLM solution should enable: • *Users other than software engineers to tailor business processes without the need to write software code.* State-of-the-art PLM systems provide service oriented architectures (SOAs) with business-friendly interfaces that everyday users can employ to view the PLM solution's data model and create business extensions to its business objects, behaviors, rules, best practices and processes. This codeless approach enables companies to avoid costly software engineer involvement in tailoring the PLM investment. • *Advanced extensions, such as integrations with third-party applications and specialized custom applications.* These extensions may still require written software code. For this scenario, the best PLM systems provide open, standards-based IDEs with templates that enable companies to cost effectively develop an extension. This approach is especially valuable for enabling high tech and electronics companies to rapidly install industry-specific solution templates – as well as other technology and industry best-practice solution templates – into their PLM environments.

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