Future-Proofing Your PLM Investment

CIMdata Commentary

Key takeaways:

- *Getting the most from your PLM investment requires being able to sustain your PLM environment well into the future—through upgrades, expansions as well as mergers and acquisitions*
- *Future-proofing means having the ability to address evolving business challenges without major disruption in a cost effective manner*
- *Future-proofing your PLM environment so that it is sustainable requires addressing multiple factors including architecture, technology, implementation, and support*

Introduction

Corporate investments in PLM are continuing to grow—not just in the capital funds spent, but also in changing the way in which the business works, including process changes, cultural changes, operational changes, partnership changes, and others. Too often, a company embarks on a PLM strategy, but finds that as time goes by, the environment and changes they originally implemented—no matter how well planned initially—do not meet their current needs as their products and their business model changes to keep up with the demands of the market. As a result, companies are asking, "how future-proof is my PLM environment?"

Companies want to know that the investments they are making now will be usable and of value in the future. They want to know and be assured that they can sustain their PLM environment as their business reacts to the inevitable changes they will face. This has led many companies to reevaluate what they need to consider when making PLM-related decisions, implementations, and associated upgrades to protect and leverage their investments. CIMdata has been studying this issue for some time and has identified a set of characteristics (illustrated in Figure 1) that CIMdata believes impact PLM sustainability.

Figure 1—Driving Factors for PLM Sustainability and Future-Proofing

Each of these characteristics impact how well a PLM environment will carry forward—i.e., how sustainable it will be. Creating a sustainable environment requires investment in technological solutions, architectures, and platforms as well as careful implementation planning, deployment, and on-going support.

To address their customers' needs for sustainable PLM environments, Siemens PLM Software (Siemens) is working to improve their solutions' sustainability through a strategy they call "future-proofing."

Future-Proofing PLM

A future-proof PLM architecture must be able to support change in the context of an enterprise deployment with minimal disruption of the business. While this is occurring, the cost of ownership must be maintained at an optimal level of return on investment even through changes in business models, expansions, mergers, and acquisitions.

Using solutions that help a company future-proof its investment is a key to success. But these solutions must also be implemented and supported in a future-proof manner. Several factors need to be addressed to future-proof and sustain a PLM environment. The following are some of the major considerations:

- Use solutions that are open for integration and built on industry standards that better enable information and functions to interact with other systems and are easier to upgrade in the future. Generally, companies require solutions that support heterogeneous mixes of applications that provide long-term flexibility and make it easier to collaborate with partners, suppliers, and customers.
- Deploy solutions that are architected and built modularly to support continuous implementation and upgrades. This enables upgrades or new functionality to be added as required without having to update the entire environment simultaneously. It also enables functionality from third-party solution providers to be incorporated more easily.
- While most modern PLM solutions will scale, the solutions to be implemented should be validated with regard to their ability to scale in both scope and size without restricting how they will be used—numbers and types of users, locations, functionality, etc.
- Solutions should ensure that users can effectively access and use the PLM environment from wherever they are located at any time with any of their preferred devices (e.g., smart phone, tablet, laptop, desktop). To be most effective, personnel need to be able not only to access the information but also utilize the full capability of the PLM solutions regardless of location or device being used.

Siemens has recognized the needs of their customers for a sustainable or, in their terms, a future-proof PLM environment. They have a strategy and programs in place to address these issues and are architecting their solutions accordingly. The following section discusses Siemens future-proofing approach to PLM sustainability.

Siemens' Future-Proof Approach

Siemens states that they are building their PLM solutions on four technology-focused cornerstones that create a future-proof architecture designed to best support evolution while minimizing the total cost of ownership. Siemens says their approach to architecture is "organic" and emphasizes modularity of components to enable incremental replacement of elements and resulting in a stable, robust IT environment for PLM applications. Siemens' objective is to address the IT complexity inherent in a comprehensive PLM environment and help companies achieve operational simplicity. The architecture is designed so that their

customers can more easily maintain, customize, and upgrade their PLM environment to take advantage of new technologies and applications for maximum business productivity. CIMdata believes that these technology-focused cornerstones are encompassed within our definition of PLM sustainability as shown in Figure 1.

Siemens defines the cornerstones of a future-proof PLM architecture as:

- Open—An enterprise PLM solution needs to use open standards and protocols so that information from any source can be shared and reused across the entire enterprise without losing fidelity.
- Scalable—Enterprise PLM solutions need to be scalable for any size user base and provide the performance needed for maximum user efficiency.
- Compatible—Enterprise PLM must be compatible with a broad range of technologies and support all types of IT platforms and operating systems.
- Configurable—PLM deployments need to be easily configured so that they can be adapted to a dynamic business environment and changing enterprise needs.

Open: Siemens strives to deliver a portfolio of PLM components that offer customers, including competitors, a level playing field when it comes to PLM interoperability and core functionality. These components include: Parasolid, D-Cubed, PLM Vis, Kineo, and Geolus. Additionally, Siemens publishes the JT file format, which has been accepted by ISO as ISO 14306:2012—a global standard for sharing and visualizing 3D data, and PLM XML, which provides a collaborative data sharing protocol for PLM applications.

Siemens also participates in the ProSTEP iViP Codex of PLM Openness initiative as part of the core team that helps formulate openness policies with respect to PLM interoperability, infrastructure, extensibility, standards, and partnerships. By participating, Siemens voluntarily pledges to adhere to the codex to the benefit of the entire PLM community. CIMdata believes that as the codex becomes more completely defined and supported, codex-compliant solutions will be able to more easily interact with other applications, such as those from multiple competitors, and make it simpler for companies to deploy and maintain sustainable, heterogeneous PLM environments.

Scalable: Siemens has chosen to achieve scalability by architecting computationally intensive applications for high performance so they support multi-core processers, and deliver optimized database response times. Siemens 4th Generation Design and NX CAD/CAM/CAE systems are examples of high performance tools that utilize these techniques to maximize performance. CIMdata believes that these types of solutions help provide the scalability companies need to ensure their PLM environments can support the demands of a growing business and expanding use of PLM across the extended enterprise.

Compatible: Siemens' solutions can be implemented using a broad range of IT platforms including those based on technology from Amazon, IBM and Microsoft. Siemens applications can be hosted on-premise or deployed on a cloud either internally or through a service provider. Integration of Enterprise applications like SAP, Oracle, and multiple manufacturing execution systems is supported and aggregated data is accessible through Teamcenter search services or through direct integration. Siemens states that all PLM applications are designed to be easily "versioned up" without losing any data and, where appropriate, support standard Internet protocols like LDAP and reverse proxy for secure data sharing. CIMdata thinks that the ability to run your PLM environment on multiple IT platforms can better enable

customers to sustain that environment through mergers and acquisitions and technology evolutions.

Configurable: Siemens is providing a variety of tools to help customers configure their PLM solutions to adapt to a dynamic business environment and changing enterprise needs. The Teamcenter Business Modeler helps ensure that Teamcenter can be fine-tuned to meet a company's business objectives without writing code that would need to be rewritten during future upgrades. Teamcenter Global Services provides a set of connector building blocks that can be used to configure custom integrations for legacy and 3rd-party systems to enable data retrieval from multiple sources, and support data synchronization and propagation of workflows across multiple applications. The ability to configure your PLM environment without having to re-do the work at each upgrade is another factor CIMdata considers important in creating a cost effective sustainable environment.

Finally, Siemens states that their PLM architecture is designed to provide an IT environment that maximizes operational simplicity and enables upgrades and customization with minimal effort. A PLM enterprise with these characteristics is designed to be "future-proof" and provide the enterprise with the tools and information needed to maximize productivity and minimize total cost of ownership.

Summary

Ensuring that a PLM investment is future-proof requires upfront planning, selection of technologies and solutions designed to be sustainable, and the proper implementation and support of both technology and processes. Successful execution will result in significant time and cost savings well into the future. It is important that companies evaluate their PLM investments with respect to the sustainability factors and the four cornerstones of future-proofing so that these investments will meet corporate return on investment objectives and provide the company a competitive advantage.

Siemens has used the four cornerstones of future-proofing as a roadmap for the development and implementation of their PLM solutions to help their customers address the IT complexity inherent in a comprehensive PLM environment and achieve operational simplicity. Siemens' PLM solution architecture is designed to help customers more easily configure, deploy, maintain, and upgrade their PLM environment to take advantage of new technologies and applications for maximum business productivity. CIMdata supports Siemens' efforts to future-proof their solutions, which in turn should significantly help companies sustain their PLM environment in a cost effective manner.

About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of Product Lifecycle Management (PLM). CIMdata provides world-class knowledge, expertise, and best-practice methods on PLM. CIMdata also offers research, subscription services, publications, and education through international conferences. To learn more about CIMdata's services, visit our website at http://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 Oogststraat 20, 6004 CV Weert, The Netherlands. Tel: +31 (0) 495.533.666.