

## Enabling Innovation in a PLM Environment

### CIMdata Commentary

Innovation results from applying best practice processes to product creation. In order to be innovative, an organization needs to understand its intellectual assets or knowledge base as well as how to use and apply these concepts to create new or improved products, processes, services, and markets. Fostering innovation requires an environment that supports access to information, the ability to view and interpret that information, knowledge management, and collaboration on that information to maximize the use of as much knowledge and talent as possible across the enterprise.

In today's challenging global markets, enterprises must innovate to improve their market position, to bring significant value to their shareholders, customers, and employees, and in many cases to survive. It is important that this innovation occur across all aspects of the organization—product, process, and organization—to improve competitiveness, quality, and overall business performance. Continuous innovation consistently results in right-to-market products and services. According to K. Pavitt (British Journal of Management, 1991) “Innovative organizations are twice as profitable as other firms.”

Businesses today face three ongoing challenges: improving customer relationships, improving operational excellence, and providing product leadership. Businesses must become more innovative to meet these challenges. However, being an innovative business does not simply mean creating innovative products; it also means improving the processes a company uses to design, manufacture, market, deliver, and service its products. Innovation is recognized as a critical enabler for businesses to maintain their competitiveness in the marketplace. However, to improve business performance, innovation must be achieved while reducing overall product-related costs for development, production and service.

While innovation can occur spontaneously in almost any situation, the ability to continuously innovate requires an environment that nurtures collaboration and enables the intellectual assets of the enterprise be leveraged to the maximum potential. In order to attain this “environment for innovation,” enterprises must be able to capture, manage, and leverage their intellectual assets. Product Lifecycle Management (PLM) is the business strategy that best allows organizations to establish an innovation environment. This strategic approach helps enterprises achieve their business goals of reducing costs, improving quality, and shortening time-to-market, while innovating their products, services, and business operations. For an enterprise to innovate, it must implement and adopt a product development environment that enables several concepts:

- Developing an improved focus on capturing knowledge during product development and definition, enabling it to best capitalize on its intellectual assets.
- Enabling integration among people and organizations and promoting collaboration across the product development lifecycle.
- Effectively sharing product definition information and knowledge throughout the extended enterprise and throughout the entire life of the product.
- Seamlessly integrating with suppliers and partners to make them a logical extension of the enterprise to maximize collaboration and creativity.

Today's PLM environments provide essential support for innovation. PLM has steadily evolved from engineering-centric data management solutions to extended enterprise knowledge management environments that support the collaborative creation, management, dissemination, and use/reuse of product definition information from concept to end of life. The key to PLM environments is the ability to unlock an organization's knowledge by capturing and sharing it throughout the entire value chain.

PLM has become a powerful business and technology approach that has been shown to deliver substantial benefits to organizations that use it. Through the proper implementation and use of PLM environments within an enterprise, organizations can significantly improve their ability to use their knowledge base to develop innovative products, services, and product development-related business processes. Knowledge use is a two-way process. Creators of knowledge must publish it and make it available, typically within the PLM environment. On the other hand, people must be willing to find and reuse that knowledge which has been published; therefore it has to be classified so that it can be easily found. Fundamental concepts of PLM that support innovation include:

- Accurately capture information and knowledge at the point and time of its creation, including all of the information that defines products as well as the processes required for manufacturing, maintenance, and disposal.
- Provide universal, secure, managed, convenient access to product definition information and the processes through which it is developed.
- Provide access to the knowledge base of past product developments, both successes and failures.
- Maintain the integrity of all product definition information as it evolves throughout the life of the product from concept to end of life.

PLM provides the infrastructure that ensures that the intellectual assets of a company and its extended enterprise are effectively created, captured, managed, and leveraged. PLM provides a digital backbone for knowledge management. It also ensures that the right product definition information is available at the right time, to the right people, in the right context. These are key elements in enabling the creation and delivery of innovative products and services. By streamlining access to key intellectual assets, PLM enables collaborative work environments that can be used to leverage expertise from multiple organizations.

Management of the product definition lifecycle has improved dramatically with the availability of a wide range of new PLM technologies and approaches that facilitate collaborative work efforts across extended enterprises. However, it must be remembered that PLM is much more than a technology. It is a strategic business approach that enables product and process innovation through technology, processes, best practices, and other elements that provide a complete environment to support innovation of products, services, processes, and markets.

### **About CIMdata**

CIMdata, an 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). CIMdata provides world-class knowledge, expertise, and best-practice methods on PLM. CIMdata also offers research, subscription services, publications, and education through international conferences. Visit <http://www.CIMdata.com> for more information.