Wipro Unites Software Development with PLM

CIMdata Commentary

Key takeaways:

- *Software increasingly has become the technology differentiator in today's complex products—without integrating software into the product development process, product launches can become market failures*

- *Integrated Product Development Lifecycle should be tool agnostic and able to use existing installed toolsets that are already in production, rather than requiring a rip-and-replace approach*

- *Wipro has developed an holistic and product agnostic framework uniting software development into PLM*

Over the last few decades, manufactured products have become increasingly "smart," driving growth in the level of embedded electronics and software. The ubiquity of Internet access and the availability of cheap sensors and computing power make it easy to connect these smart products to drive new value for customers, enable innovative business models, and help manufacturing companies learn how their products are actually used and perform in the field.

Based on CIMdata's consulting experience, many industrial companies are still struggling to adopt the technologies and processes necessary to make smart, connected products. Traditionally, PLM has been more focused on the mechanical elements of a product with software development running a parallel, disjointed process, shown in Figure 1. As products became smart, the embedded software was developed using other tools, sometimes licensed, but often open source. That software routinely became part of the bill of material (BOM) by attaching a .zip or .tar archive to the mechanically oriented BOM. Just as PLM evolved from authoring tools and data and process management, tools for software development evolved to support authoring, configuration management, change management, workflow, and other capabilities under the application lifecycle management (ALM) umbrella.
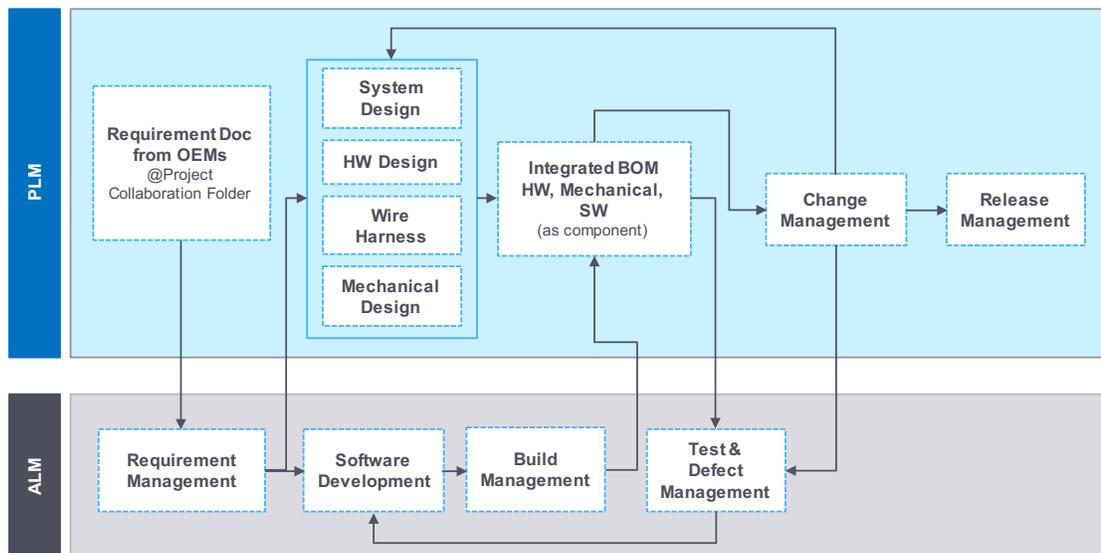

Figure 1—Intersection of Hardware and Software Product Development Cycles
(Courtesy of Wipro)

All the while, software has become an increasingly critical component in today's complex products. Today's automobile contains embedded systems with millions of lines of software code, more complex than even fighter jets. And yet, without integrating software into the PLM process, software failures are becoming more and more common. In recent years, software has been responsible for nearly 20% of product recalls costing firm's profitability, market share, and even business failure.

To improve the level of integration of processes and artifacts, many leading PLM solution providers joined hands with software tools companies. However, this approach will take years before new software releases become available and are subsequently integrated and introduced into production at industrial firms. A solution that works with currently deployed systems is needed.

As a leading PLM system integrator, Wipro has addressed this need. Building on their alliances with major ALM and PLM providers, Wipro has developed an integrated solution that brings software development into the overall PLM process. This tool-agnostic approach is based upon the use of OSLC (Open Services for Lifecycle Collaboration) for integration with major ALM providers, linking them with major PLM tools, using interfaces that are currently deployed and in production at industrial firms. Since the Wipro solution layers on top of current PLM systems (as shown in figure 2), firms receive the benefits of integrated software development with the PLM systems much sooner.
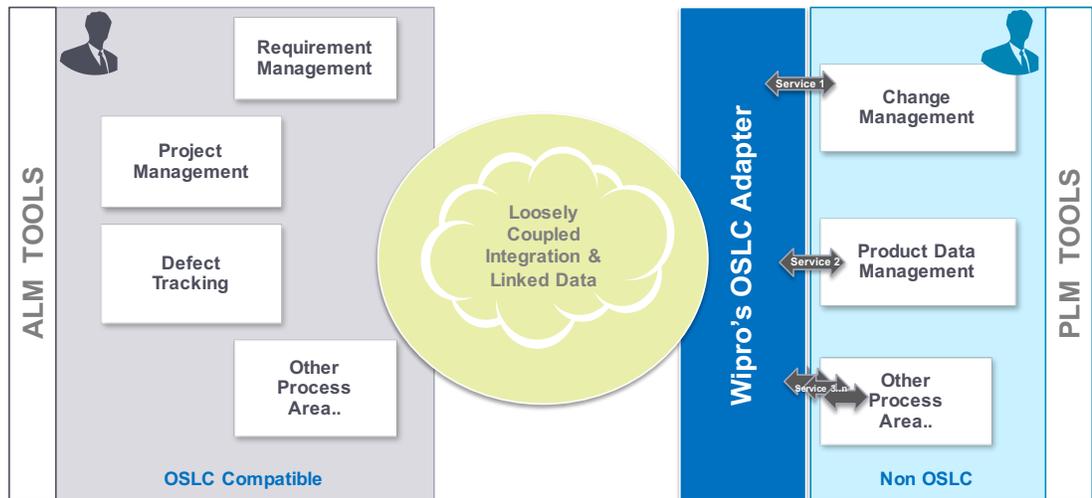

Figure 2—Wipro PLM-ALM Integration Architecture
(Courtesy of Wipro)

CIMdata believes that integrating software and product development processes is a critical factor to ensure product success. When this is properly done, organizations benefit from:

- Leveraging current investments—Integrating many lifecycle tools without extensive effort

- Providing a single source of truth—Linked Data enables data integrity, data traceability, and process consistency across all product definition information

- Improving productivity—Enablement of Continuous Integration/Continuous Delivery (CI/CD)

Having an integrated solution that is tool agnostic, means these benefits are available in the near term, not years from now. Wipro is a global PLM solution provider that can make this vision happen.

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.