

PLM Investment Sustainability: Measuring Long-Term Resilience

CIMdata Commentary

Key takeaways:

- *A sustainable PLM solution is one that can meet current and future business requirements with an acceptable return on investment (ROI) via incremental enhancements and upgrades*
- *A sustainable PLM solution minimizes risky, complex, and expensive “Rip and Replace” projects*
- *CIMdata’s PLM Enterprise Value & Integration Knowledge Council has done research on the topic of PLM investment sustainability and developed a model that can be used to assess the sustainability of PLM solution implementations within industrial companies*

Introduction

CIMdata defines a sustainable PLM solution as one where the complete PLM solution (i.e., the software, processes enabled, and support service) is meeting the company’s business needs now and well into the future via continuous and cost effective improvements rather than a series of discontinuous, high-intensity, and costly PLM replacement events. CIMdata has developed a model and process to assess the sustainability of a PLM solution implemented at industrial companies.

As a part of its PLM Enterprise Value & Integration (PEVI) Knowledge Council, CIMdata has conducted research on PLM sustainability that has resulted in the PLM Investment Sustainability model presented in this paper. Based on interviews with industrial companies, PLM solution providers, and CIMdata’s consulting experience, PLM Investment Sustainability has been distilled down to the seventeen elements shown in Figure 1.



Figure 1—PLM Investment Sustainability Elements

These elements are defined as follows (also see Figure 3):

- **Functionality**—Examines how well the solution’s breadth, depth, robustness of capability, and security support end user and organizational requirements.
- **Usability**—Determines how well the solution can be operated by end users to produce their required deliverables.
- **Stability**—Considers the solution’s ability to remain functional over time under stated or reasonably expected conditions of use.
- **Reliability**—Looks at how well the solution can consistently perform according to its specifications, as well as its reliability and dependability as related to the accuracy and validity of managed data, and/or achievement of required supporting capabilities and processes.
- **Availability**—Examines the solution’s readiness for use in terms of the ratio between the time during which the solution is operational and elapsed time.
- **Compatibility**—Considers how well the solution can be connected to appropriate enterprise and desktop solutions within the organization without the use of special software (i.e., custom interfaces).
- **Scalability**—Examines how well the solution can adapt to increased demands, usually in the number of end users and the amount of data managed.
- **Portability**—Determines the solution’s ability to be installed and operated in an operating environment other than the one in which it was initially deployed without requiring major rework.
- **Mobility**—Considers how well the solution can access data and functionality from multiple end user interface devices freely, easily, spontaneously, and independently.
- **Configurability**—Examines how well the organization can configure the solution’s data model, user interface, and workflows to fit the organization’s specific and changing requirements.
- **Localizability**—Tests how well the organization can make the solution relevant to the organization’s various units around the world (e.g., by the ability to configure and support local languages, processes, terminology, etc.).
- **Extensibility**—Examines how well the organization can expand or add to the solution’s capabilities.
- **Maintainability**—Determines how well the organization can keep the solution operating in an appropriate condition.
- **Upgradability**—Looks at the organization’s ability and ease related to implementing a new version of the solution.
- **Installability**—Considers the organization’s ability and ease related to loading and configuring the solution before its first use (including the first issue of an upgrade).
- **Testability**—Examines the organization’s ability and ease related to validating the solution’s capabilities against the solution’s defined requirements.
- **Openness**—Considers the solution’s openness; including what license terms control use of the source code, underlying frameworks, databases, data formats (XML, etc.), and protocols (SOAP, REST, etc.).

By measuring their support for these elements an organization can gain a broad perspective on where their PLM solution is operating well and what areas need attention.

Why Should I Care?

At CIMdata, we believe companies have always managed their product lifecycle, but ever increasing pressures and complexities are forcing companies to leverage technology to improve efficiency and stay competitive. Customer and regulatory requirements as well as competition drive companies to continue to develop products and services that perform better at a lower cost. A by-product of product development is an increase in product definition data and more complex relationships between data elements that lead to the need for more complex technology and processes to manage the information.

Figure 2, from the CIMdata whitepaper, *An Emerging PLM Value Gap in the Aerospace & Defense Industry—Initial Characterization of PLM Value Leaders*, September 2013, shows how PLM Solution capability and value vary over time. The blue Vision curve represents the vision of the PLM solution providers, that is what they believe they can deliver. The green Technology curve represents the actual capability available within PLM solutions. The dashed black line shows the average value obtained from implementing a PLM solution and the heavy black curve represents the value that leaders receive. The gap between this Implementation line and the Technology curve is the value gap that the best implementations minimize. Based on its research, CIMdata is seeing a bifurcation of companies where the leaders are getting, and will continue to get, better value and ROI from PLM technology than the followers.

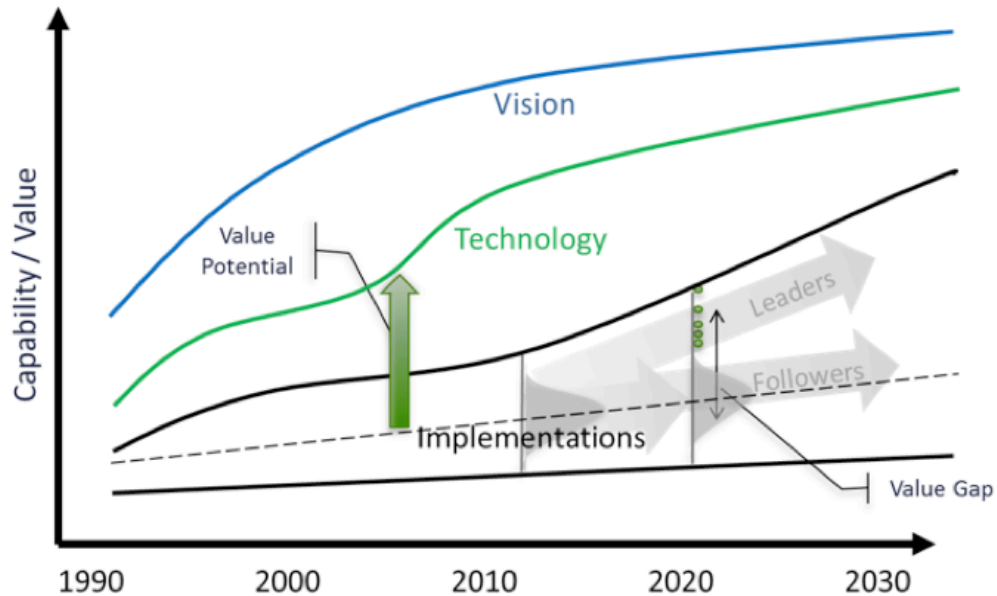


Figure 2—PLM Value Gap

The fundamental issue executives are concerned with is long-term return on investment. They want to ensure they are getting the maximum value from their PLM investment and that the magnitude of the value gap is minimized. A core issue with long-term ROI is whether the PLM environment can support current as well as future business requirements including upgrades, expansions, and mergers and acquisitions without significant disruption or expense. The PLM Investment Sustainability Model is designed to help industrial companies quantify the elements that create the gap so it can be minimized, and ROI maximized.

CIMdata’s PLM Investment Sustainability Model

The PLM Investment Sustainability Model is built using CIMdata’s proven maturity model methodology. The seventeen elements are clearly defined and key criteria characterize the elements. For this model, the levels of maturity are unsustainable, partially sustainable, and fully sustainable. Unsustainable solutions must be replaced to support current and future needs. Partially sustainable solutions can support current and future needs if some investment is made to improve the solutions. Fully sustainable solutions can meet current and future requirements via straightforward continuous improvement.

The data acquisition for the model is implemented using a web-based survey. A series of questions captures the current state of each element’s criteria. This data is then processed to provide the level of sustainability for the organization. Figure 3 shows an example of sustainability measurement.

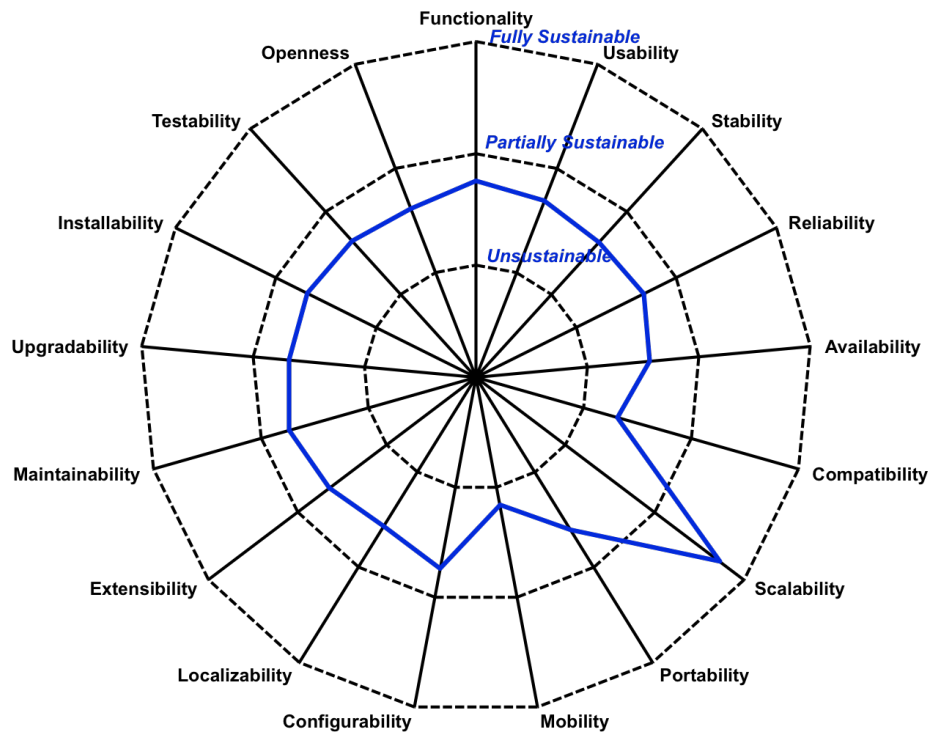


Figure 3—PLM Investment Sustainability Model Result

Using the PLM Investment Sustainability Model

The PLM Investment Sustainability Model provides a systematic method of assessing the sustainability of a PLM solution deployment. The results from the model are presented in simple, visual charts that can be used to identify areas for improvement. After PLM solution changes are made re-execution of the model can measure the effect of those changes on sustainability. The model can operate as a standalone solution or can be integrated with other business tools and processes.

Closing Comments

The PLM investment sustainability model provides a quantitative tool that can be used by industrial companies as well as solution providers to assess the sustainability of a PLM solution. Based on the results, industrial companies can choose improvement projects that will maximize their PLM solution performance and its sustainability into the future. Members of the PEVI knowledge council provided input to develop the model as well as validation support to ensure its accuracy. Council members have the right to use the model for internal assessments and solution provider PEVI knowledge council members can use it to assess their clients and prospects. Contact Tom Gill, t.gill@cimdata.com for more information.

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.