

Illusion of PLM in High Tech Persists

CIMdata Commentary

Key takeaways:

- *HTE companies are ill-equipped today to deal with the next wave of product complexity driven by IOT and connected products*
- *High tech product knowledge is distributed across the supply chain so collaboration with security is needed*
- *Today's High Tech business challenges should not be solved through islands of solutions—things must change*
- *Platformization of PLM needs to be considered, it's not about tearing out legacy tool—they need to be connected to get much better value*

There has been an ongoing illusion shared by executives in the High Tech sector that they have PLM. Despite the fact that the promised ROI was not achieved they are reticent to examine the issues deeper to better understand what has really transpired. This commentary explores the history behind these perceptions, the current challenges and gaps, and how to augment existing systems for better ROI.

The current poor state of PLM in High Tech is largely a result of limited adoption, economic downturns, and failure to continuously improve. High Tech in the mid 1990s needed fast out-of-the-box capabilities for managing bills of material (BOMs) and engineering change. Many implementations had at best a one-way information transfer to ERP and mechanical and electrical CAD data were managed outside of the environment with no connectivity.

For High Tech, the industry downturn preceded the global downturn by several years. The sector was hard hit in the 2002–2003 timeframe. Many electronics companies went through multiple rounds of cutbacks, and enterprise initiatives were frozen. Companies that had PLM, in the most basic of forms, lost steam, and lost champions. As expansion in the High Tech industry restarted, the pressures to manage supply chains, requirements, compliance, and more, have exponentially increased and many ad hoc and informal methods have evolved to make up for the shortcomings of PLM.

PLM, as executed in many High Tech companies, is full of disconnects. The systems are only partially connected to ERP, are typically not integrated to MCAD or ECAD, and rarely, if ever, connected to the software development environments. Companies are unable to get a complete product bill of materials. Component management, as previously discussed in [a prior CIMdata commentary](#),¹ is commonly managed in excel spreadsheets, and compliance management is frequently done outside of the PLM platform. Change management within many of the solutions is considered to be restrictive and not flexible enough to support the increasingly complex product definitions and the myriads of personnel who need to be engaged in the change process.

In the last decade supply chains in the High Tech industry have grown more and more complex and with an increasing focus on core competences. For example, a typical supply chain now consists of a complex network of partners collaborating on everything from ideation, design, manufacturing and aftermarket service. Combined with the shorter and

¹ *Aras Component Engineering Improves Development of Complex Systems in Partnership with HIS*
<http://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/5159-aras-component-engineering-improves-development-of-complex-systems-in-partnership-with-ihs-commentary>

shorter lifecycle of many high tech products, this means that being able to get the correct data pushed up and down in the supply chain in a traceable, secure and effective way is increasingly important. This growing interaction with the supply chain, design partners, and distributors is not well supported with the 1990s style of PLM that most High Tech companies have deployed. But many companies don't have the appetite or budgets to rip and replace, so status quo is the norm.

But, what if? What if there is a remedy? What if the answer is not to rip and replace, but rather to build a platform, a backbone? CIMdata has talked a lot about the platformization of PLM and how important it is. It's crucial to recognize that there is no one system that will resolve every business need for managing the product, and that PLM is a business approach, a practice of managing product information cradle to grave. Some will refer to needing a digital twin, however, what has to be addressed is closing loops and eliminating disconnects. That can be done if one starts with updating the PLM vision and connecting the islands of systems. This must be done to support the exponential complexity associated with modern product development, and to support upcoming IoT requirements. The problems are not unique to a given company size today, these issues exist for all High Tech companies and have the same scale of impact on all companies.

Over recent years many companies have been deploying Aras Innovator as a PLM backbone, using it to link islands of technology into an integrated solution. Out-of-the-box integrations to common PDM and ERP solutions and a flexible model-based service oriented architecture (SOA) for configuring applications enable Aras Innovator to serve as central source of product information and provide additional PLM capabilities needed on a one by one basis. By using Aras Innovator as a backbone companies such as Carestream are gaining capabilities rapidly, without having to rip and replace, or undergo massive data migrations. One of Aras' partners, Minerva, has noted the trends, gaps, and challenges for High Tech and has built a standard Aras template and deployment methodology for the industry which implements High Tech use cases, and can be deployed quickly, minimizing business disruption.

With Aras Innovator and Minerva's Electronic PLM Solution for Aras, companies can begin the process of transforming from the restrictions of the solutions they have today, to a platformized approach that improves business processes without having to tear out the old. The Aras/Minerva solution addresses many of the High Tech use cases that are repeatedly encountered in Aras deployments—such as preconfiguring part classes to better support industry standards and components. With change management, Minerva has built in a dynamic business rules based workflow, in answer to the limitations of most state based workflows. For a given lifecycle state, the workflow adapts, making the process easier to follow while eliminating the need, ability, or inclination to bypass the workflows.

The Aras/Minerva Solution also provides easy import/export tools and access controls to support supply chain collaboration. But Minerva didn't stop there. Many people loved having a PDX (PLM XML standard) based viewer, yet the limitations have been significant. Minerva responded by creating a new export package (MDV) that supports the dynamic Aras Innovator data model, and includes a viewer that supports the expanded data sets and business models of Aras Innovator and the Electronic PLM Solution. For the most effective supply chain collaboration, key partners may access the system directly. Other suppliers may access data in either PDX or Minerva's own MDV format. Either way the data is mastered in Aras, and there is certainty that the data provided is the correct version. There is also an audit trail of who got what and when.

CIMdata hears a lot of companies talking about being open and how they intend to support a platformized approach to PLM. The flexible architecture and support of common industry standards enables Aras Innovator to serve as a PLM backbone for more and more companies. Minerva has developed a solution on top of the Aras platform to support High Tech—preconfigured so disruption and time to deploy are minimized, improving the ROI.

The High Tech industry has been struggling with short, fast paced lifecycles and disconnected systems for far too long, and CIMdata is encouraged to see companies like Aras and Minerva building out preconfigured solutions to serve as a PLM backbone that supports the processes needed to develop the next generation of connected products.

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.