From Our Experience

MERCURY PLM Services

Setting the Course for PLM

Product Lifecycle Management deployments are often championed by product-engineering departments, with the direction typically shaped by engineering or IT without the inclusion of downstream users such as supply chain, manufacturing, quality, and marketing.

Once under way, most organizations will research a few PLM packages that appear to meet their product-design needs, then will call a sales rep to arrange a demonstration. After deciding on a PLM package, a purchase order is cut and software arrives. But then what?

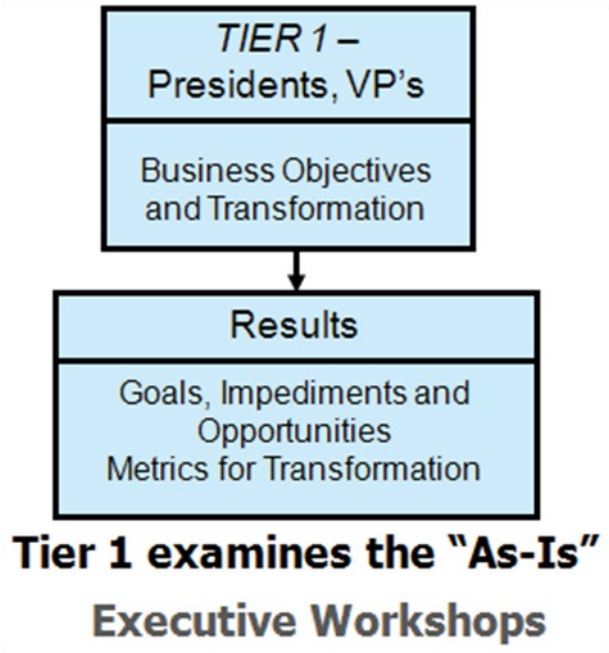
At that point significant funds have been spent on software, hardware and/or training that provides information on "how" to configure the software. But has the PLM team really thought through the business processes driving "what" to configure? How can the entire organization benefit from the PLM implementation?

To avoid this common mistake, we recommend taking several steps back before considering progress forward to focus on "Process" before technology.

Once the need for a Product Lifecycle Management system has been identified, the project champion must consider the total project landscape, including its impact on upstream/ downstream business processes required for supply chain, manufacturing, quality, and marketing, as well as technical publications, portfolio planning, and service. The organization must commit capable resources to define these business processes ahead of any system development in the chosen technology.

"From my perspective, having cross-functional participation to define business processes and an understanding of the critical touch points brings significant rewards when trying to deliver a new product to market," said John Bayless, Director of Program Management and PLM at Mercury Marine. "Without this process clarity, contributors from across the business are not aligned."

An enterprisewide "vision" for the PLM project must be established by the primary stakeholders from each of the functional areas, in coordination with senior management, to obtain the high-level support required to fund the project, offer support, and provide organizational leverage to drive



the implementation, as well as addressing the cultural-change needs.

Once the "vision" is established, upper management should start communicating to the organization through regular company channels, and by establishing a cross-functional project governance board to help manage resistance and provide clear cross-functional participation and priorities to the initiative.

After the PLM Vision has been formed and communicated, a disciplined approach of project on-boarding is used to establish end-to-end business processes through a series of workshops before unveiling technology. This approach is flexible and scalable and can be applied to any sized project, such as integration with Enterprise Resource Planning (ERP) initiatives, change management, and other system deployments.

"It's much easier to deliver PLM projects where the requirements are clearly identified, processes are well documented, and end-user expectations are managed," said Andy Miller, PLM Implementation Lead at Mercury Marine.

(Continued on page 2)

Process Focused Innovation Management

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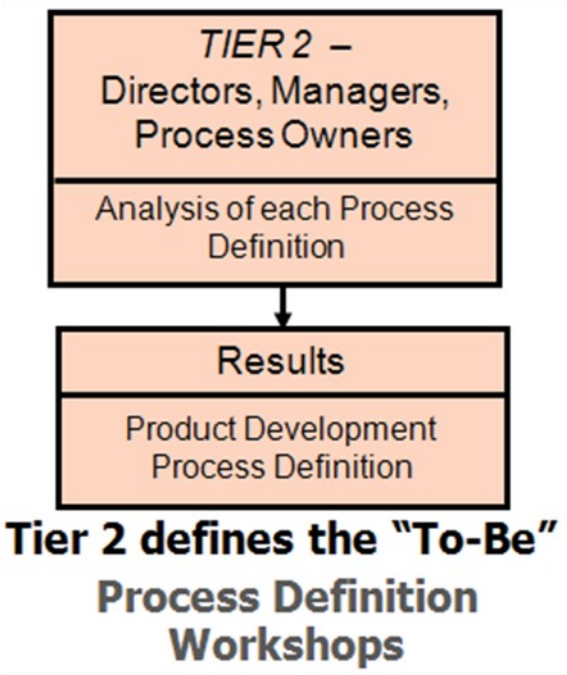
(Continued from page 1)

Tier One workshops provide a forum to gather executive expectations in terms of shortcomings, areas for improvement and expectations for the future state. Understanding the goals and expectations of upper-management early in the program establishes the project as a business initiative the company can support.

Tier Two uses information gathered during Tier One as input, then brings together cross-functional subject matter experts (SME) to establish an agreed-upon future state with agreed-upon measurable metrics. This provides an opportunity for the business to focus on processes and customer needs instead of technology "features" and perceived "benefits."



There are other impactful considerations besides processes that must be defined during Tier 2, such as:

- What part (item) schema will the organization choose (intelligent numbers or sequential)?
- How will revisions during pre-production and production be handled?
- What kind of external and internal collaboration is required?
- Is there a standard CAD package or will many be used?

"Knowing the answers to these questions is critical to scoping and configuring a PLM system," said Bala Shetty, PLM Implementation Lead at Mercury Marine. "From my perspective, an implementation should not move forward without cross-functional alignment on these issues. Answers to these questions, in addition to process development, will help shape the future PLM system."

Once cross-functional business processes are established, the company is positioned to detail the necessary software modules and licenses. In addition, the process definition will help guide how many author and consumer licenses are required to enable the chosen processes. This information is critical because many leading PLM providers have functionality tied to tier-based pricing/licensing. Having a process-based PLM Roadmap also provides an opportunity to break the PLM licensing and system-configuration costs into manageable, forecasted pieces.

For example, the PLM Vision established during Tier 1, and the "To Be" process defined during Tier 2 may lead to implementing core PLM functionality such as product configuration and change management. But once the core functionality is implemented, the Roadmap may specify that visualization, document management, and project support functionality will eventually follow. Rather than purchasing licenses and budgeting configuration resources for the entire project, a company can take a more affordable approach by only budgeting funds for what is necessary for each step.

"The ability to scale the deployment is available only if the organization first establishes its long-term PLM Roadmap and defines cross-functional processes before investigating technology," emphasized Miller. "Remember, processes drive business solutions, not software."

Tier Three activities map the cross-functional processes defined during Tier Two against the chosen enabling PLM technology. Data sources, reporting requirements and system architecture needs are reviewed and a technical plan is developed to support the technology implementation.

At this point, software/hardware purchasing and installation occurs, and the application(s) are configured according to the agreed-upon business processes. It is also recommended to define the internal and/or external ongoing administrative support required by the chosen process implemented, which will help establish a plan for growing a PLM support team.

It is also suggested to involve key business users from each facility/function impacted by the project in system-testing activities to ensure that future-state processes were configured correctly in the chosen PLM technology. These events, called User Acceptance Tests (UAT), are a critical milestone to the system development and should be treated with the same importance as customer-driven quality sign-offs.

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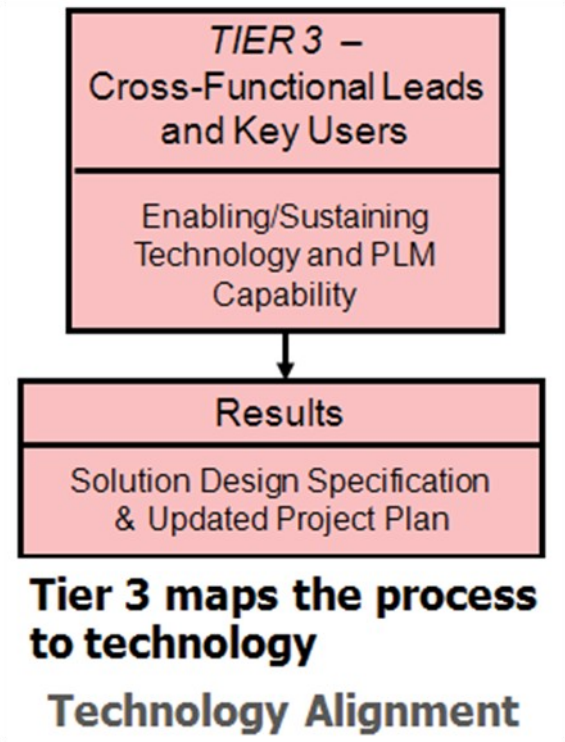

"At each major step along the way, upper-level stakeholders should be kept informed on project progress, road blocks, and other relevant issues through Project Governance Meetings," cautioned Bayless. "The PLM implementation team should also establish project progress metrics early on and use these key indicators throughout the implementation."

The Mercury PLM Services team has used this proven approach successfully in many organizations, including aerospace, consumer goods, and heavy equipment. Aligning all levels of the organization early on, then establishing business processes ahead of technology is critical in keeping an implementation progressing efficiently and providing the desired outcome.

Mercury PLM Services Unique Perspective

Our differing approach concentrates on understanding your process as a must for success. A process-centric approach requires businesses to review and question existing work streams to understand "why," "what," and "how" work should be done to establish efficient cross-functional work flows that are consistent, repeatable and scalable for growth.

We also offer a unique perspective for helping organizations considering a Product Lifecycle Management implementation because we view PLM from a manufacturing business user's vantage point since we live and breathe it daily.

Because we work in a dynamic, global product-development environment that supports a worldwide manufacturing foot-print, we have a user's perspective that helps drive results and realize improvements. Several of our experts also have been deeply involved with our ISO 9000 certification effort, as well as configuration management, and engineering document-management practices.■

PLM OFFERINGS

Business Process
- Product Data Process Evaluation
- PLM Visioning & Roadmap
- Business Process Facilitation
- Process Impact Communication

Data Management
- CAD Configuration & PDM Integration
- Large Assembly Management
- Product Data Mgmt.
- Change Management
- Visualization

Prod. Data Planning
- Portfolio / Project Management
- Part Attribute Mgmt.
- Product Cost Eng.
- Requirements Mgmt.
- Collaboration

Back Office Support
- Environment Planning
- System Assessment
- System Admin Mentoring
- Upgrade/Patch Install

Manufacturing
- CAM and Tool Data Mgmt

Knowledge Sharing
- Hosted Events
- PLM Mentoring

Implementation
- PLM Implementation
- Training Facilitation
- ERP Integration

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