From Our Experience

MERCURY PLM Services

The Great Debate

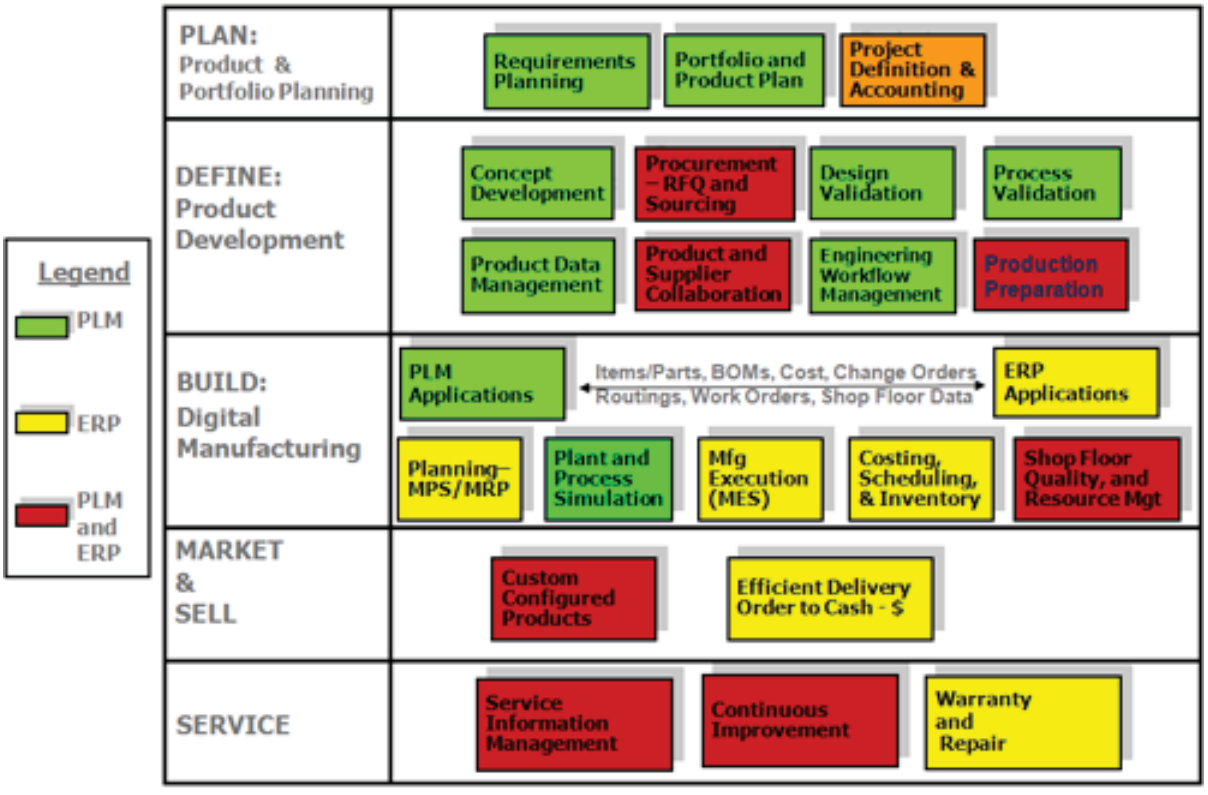
In virtually every business transformation, critical decisions define the success, or failure, of the project. If the transformation includes the marriage of a PLM/PDM system with an ERP system, there is no greater, or more heated, debate within the project team than where items (parts) are mastered, then the way manufacturing BOMs are managed.

Our organization experienced such a storm during the form ative years of our transformation not once, but twice. Round One decided item ownership. Several years later Round Two hammered out the manufacturing BOM/route/quality data strategy.

There are several reasons why these decisions are so traumatic for an organization. One reason is that business transformation provides an opportunity to completely rethink how an organization operates and, for most team participants, it is a "once in a career" event and a rare chance to be involved with such an endeavor. Everyone wants to "do what is best for the business," and understands the ramifications of making bad choices (it is likely the current-state system is a sub-optimized solution).

Another reason is the consultants/software vendors involved apply a significant amount of pressure to the business team. In some cases the software vendors are vying for a functional land grab because the more business processes/functions that are "owned" within their system, the more increased upfront licensing and services fees, in addition to lucrative long-term maintenance costs, will materialize. In other cases the software vendors or consulting team may not want to tackle the integration challenges, or may not recognize that the PLM system has enterprise benefits. After all, PLM only holds engineering stuff, right?

PLM/ERP Integration Data Ownership



To help shape the decision making process, we drew a philosophical line in the sand. If the data was transactional in nature, it was to be owned by ERP. Anything related to product design, process definition, or configuration was to be mastered in PLM. With that said, there are some areas of overlap, such as quality, shop floor data, and resource management.

Our business transformation roll-out strategy was also

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Process Focused Innovation Management

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shaped by this approach, as we implemented PLM before ERP because, from our perspective, the item ownership and birth was the core information upon which all other systems and associated data are based.

"It was essential that the business understood where item information and associated meta data would be mastered before embarking on the journey," said Lenny Grosh, PLM Program Manager.

This ultimately led to the decision to use PLM as the item master and push the item, core attributes, and ECN information to ERP. Significant discussion and thought went into this choice. Eighteen discussion points required definition and sign-off, while the PLM/ERP ownership discussion occurred. Some considerations that affected the outcome included:

- Item definition, establish a single item schema for all business units/locations (Unintelligent, sequential part number)
- Attribute definition to manage part intelligence
- Service parts, kits, etc.
- Revision schema, establish a common schema for all business units/locations (Numeric for pre-production, alpha production)
- High-level, cross-functional process flows
- Item status definition throughout the lifecycle state
- Legacy items migrated into Teamcenter for initial deployment
- Capture legacy attributes for migration into Teamcenter for initial deployment

The implementation team established cross-functional workshops and guided the outcome using our 3-Tier Approach (discussed in a previous column) as a common framework. To help level-set workshop sessions, discussions focused on attribute definition and a common understanding of the following terms:

- Core Attribute – Attribute used by multiple functional groups, mastered in a single system. Examples include item number, item description, item revision, Unit of Measure, item type, status, ownership, and item class.
- Functional Attribute – Attribute used exclusively by one functional group (engineering, purchasing, quality, etc).
- Attribute Owner – A single functional group with authority to create/modify attribute data within the system.

Once the team separated attributes using these definitions, information was further categorized using the following questions:

- Which attributes are owned by PLM or ERP?
- Are attributes owned by PLM and read by ERP?

The deliverable from the Tier 1 workshops was a cross-functional sign-off of these decisions at the VP/C-levels so the downstream business owners had guide posts to work from during process definition workshops (Tier 2).

"Coming to an upper-level, cross-functional agreement on these discussion points was huge for us because now we had something in stone to take back to the downstream business users," emphasized Grosh.

From our experience, if a signed-off document such as this is not produced prior to engaging the business transformation implementation teams, the potential for rework and business discontent is significantly increased. Our transformation team referred back to this signed document countless times during the crucial Tier 2 process discussions as a way to level-set the workshop participants and establish objectivity. The amount of emotion and angst around establishing these criteria cannot be understated. Any guide posts provided by upper management will only help the process-definition teams succeed.

These guide-post decisions also provide the system configuration teams with clear directions as they start setting up the processes and business rules within the chosen PLM and ERP tools. It also helps with business-communication sessions to explain how the upcoming systems will affect end-users.

"Organizational communication must be a priority for success," said John Bayless, PLM Practice Director. "Keeping end users informed pays huge dividends in the long run."

Throughout the business transformation journey, communicating with the business as often – and in as many media formats as possible – is absolutely critical. Face-to-face discussions are always best. Use large group sessions and functional staff meetings whenever possible.

Travel to all the plants/facilities affected by the transformation. Based on our experience of rolling out PLM throughout our organization and for clients, the satellite facilities will feel included with the deployment and are more than willing to participate in process definition activities. This alone goes a long way to successful user adoption of the system.

When the time came to plan the manufacturing portion of our business transformation, we took a similar philosophical

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approach where, if the data was transactional in nature, it was to be owned by ERP. Anything related to product design, process definition, or configuration was to be mastered in PLM.

The planning team decided that the manufacturing bill of process (MBOP) will be mastered in PLM and integrated with ERP to establish the route. With that said, there are critical attributes required from ERP to correctly populate the MBOP for consumption in the transactional system such as org structure data (plant, cell, etc). Our planning team agreed that information must be provided from the ERP system as "read only" into PLM so the attributes required by ERP are automatically populated while the manufacturing engineer structures the MBOP.

Many organizations have endured this PLM/ERP journey with mixed results – sometimes resulting in complete system redesigns after the initial implementation. Keeping things in perspective, establishing upper-level guideposts, and regular organization-wide communication will significantly improve the probability of success and reduce costly rework and consulting overruns.

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 accomplished 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 because we live and breathe it daily.

Because we work in a dynamic, global product-development environment that supports a worldwide manufacturing footprint, 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. Mercury PLM Services is a Siemens Zone SI Partner.■

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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