

PLM – ERP role-play

The evolution of the system functionality in modern ERP and PLM systems has brought up a lot of new possibilities for information management and for process automation. However this evolution towards enormous software suites with numerous modules and limitless possibilities (at least on slide level) has not resolved the question of how to set up the PLM and ERP functionality in order to support the needs of product development, product portfolio management and the order-delivery of products in an optimal way.

PLM and ERP systems have more functionality overlap than ever and naturally there are completely integrated systems as well with lots and lots of features and functions covering both of the areas.

First of all large corporations are all but homogenous what comes processes to automate and products to manage and there even might be number of ERPs in use. Companies have evolved through organic growth, business acquisitions, strategic investments and expansion to new markets. In practice this means that a corporation usually consists of number of business areas, geographical areas (or sites) and product areas.

As a rule of thumb the role play between a PLM system and ERP system is that, PLM systems manage the definition of a product i.e. the product on a conceptual level (items, BOM set-up, drawings and other documentation, configuration etc.) during a product lifecycle and when the product needs to be realized i.e. manufactured, sourced or assembled this is usually under ERP responsibility. Naturally there are gray areas in between e.g. prototyping and 0-series production.

Also sourcing information like raw material, component specs of different suppliers is in the gray area. Usually the component and raw material specs are managed in a PLM system and the actual procurement realization and the inventories of these materials / components are under ERP responsibility.

A good example also about a working collaboration between ERP and PLM system in product development is a BOM costing comparison based on the alternative BOM / component data in PLM and online component price information from ERP sourcing.

All in all a well managed company needs a company specific overall definition what are the things managed by PLM and what are things managed by ERP systems currently and how this division of responsibilities should evolve during years to come. (these kind of issues are defined in a PLM and ERP concepts)

My definition of what PLM covers is:

- a. Product Lifecycle definition
 1. Lifecycle phases as well as the characteristics and criteria of the phases
- b. Product definition lifecycle management (i.e. the evolution of product definition and related information) including the following:
 1. Product design
 1. Items and BOM's
 2. Drawings and design documents
 3. Version information
 4. Supplier items
 5. Modularity and configuration information (configuration rules)
 2. External Product documentation
 1. Product descriptions
 2. Product marketing materials, manuals etc.
- c. Individual Product unit lifecycle management
 1. Product realization
 1. Product unit items, BOM (as manufactured)
 2. Serial numbers and sourcing information
 3. environmental data and refurbishing and recycling information, raw materials and component lot data
 4. Product unit set-up information
 2. Product maintenance
 1. Set-up information
 2. Component changes and maintenance activities
 3. version upgrades
 4. Localizations
- d. Product related business management

1. Product portfolio management (idea, development and market portfolios)
2. Product profitability management
 1. Cost and revenue allocation

In practice a PLM system covers the section B functionality and a production ERP system covers the section C1 functionality and an after sales / maintenance ERP system covers the section C2 functionality. ERP and its BI modules are utilized in D.

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