Rationalizing Bill of Material Integration between PLM and ERP

A Bill of Material (BOM) within an organization is the common language used between all functions within the company to communicate and collaborate. It is the key to a company's product offering, managing configuration, product and process information, and transactions associated with each product. Within most companies, the Bill of Material has resided within the technology stack of their Enterprise Resource Planning (ERP) system, such as Oracle, SAP, etc. But, when you ask "why?", the answer is typically because most organizations implemented an ERP earlier than a Product Lifecycle Management (PLM) system, like PTC's Windchill or Siemens Teamcenter. In doing so, the BOM was developed within ERP. Within this type of implementation, the associated product information like Requirements, Specifications Computer Aided Design (CAD) and Manufacturing artifacts are left behind on an isolated island and not managed very well. Keep in mind, that both technology stacks, ERP and PLM, are needed in order to manage and utilize the BOM to its best capacity and value. Key concepts that should be integrated within the two technology systems to create the best value for both are:

♦ Full Enterprise Product Change Management and Configuration Control

♦ Integrated Item Creation and Workflow to create the needed Metadata

♦ Enterprise Collaboration—Integration of Cross-Functional involvement throughout the process

Full Enterprise Product Change Management and Configuration Control

This capability gives the organization, its suppliers and its partners the "context" to understand in what "state" the product information is at, at all times. This allows people to consume the information with the intent it is produced for. For example, using pre-production information for the gathering of quotes and prototypes, production information for manufacturing, etc. The lifecycle of the product can go into many different paths and depths depending on the company and how it conducts business. It's important to rationalize the integration of change management and configuration control in both PLM and ERP as they need to be in sync to deliver the right parts and products and associated information to purchase, build, sell and service the product throughout its life.

Integrated Item Creation and Workflow to create the needed metadata

The creation and its development of the surrounding metadata, including description, revision, and material, is key to providing the needed relevant information to develop the BOM for all products. Workflows will be utilized to progress the item and BOM through its maturity. From its initial conception as an Engineering Item that is woven into the Engineering BOM, to the addition of a Manufacturing item within the Manufacturing BOM and Service items into the Service BOM. Typical lifecycle states that are incorporated to enhance visibility are "Concept", "Design", "Validation", "Production" and "Obsolescence". With the integration of ERP and PLM systems, you gain the ability to integrate transactional information Part Cost, Inventory, etc. to part definitions enabling a single role-based user interface that provides a "One Stop Shop" to all relevant information from the systems of record.

Enterprise Collaboration—Integration of cross-functional involvement throughout the process

How to share this information with these systems in an efficient and controlled manner is essential to the long-term sustainability of the company's data sharing capabilities. The idea of creating a "Hub and Spoke" model is key to efficient development, management and sharing of information, both internally and externally. The use of this model allows for one source to manage a specific attribute or piece of information and then have the ability to be shared with other systems. If this data changes in its source location, the change gets propagated automatically to all other systems.

Rationalizing the BOM within ERP and PLM is key to gaining competitive advantage.

If interested in knowing more, give us a call and we can discuss our experiences and knowledge in this area!

Next Month: DRIVEN-4 LiveWorx Product Demonstrations