Leader in Diesel Engines Reduces Time to Respond to Changes in Design driven by Manufacturing

SITUATION

The Customer's existing Windchill system was using a single instance of Bill of Materials (BOM) for both Engineering and Manufacturing purpose. Any changes driven by manufacturing affected the BOM directly, making the update a complex and time consuming process.

IMPACT

A single view of the BOM increased the complexity and hence the time required for any manufacturing led change since the same BOM instance had to go through both engineering and manufacturing changes at the same time. This unnecessarily delayed manufacturing of products, which was dependent on the changes to be implemented and released to ERP.

RESOLUTION

With our solution of two separate BOMs –Engineering BOM (eBOM) and Manufacturing BOM (mBOM), engineers could now quickly respond to changes in Manufacturing through the mBOM without having to worry about affecting overall product design integrity. The change once implemented could then be moved into ERP through an automated integration between Windchill PLM and Oracle ERP enabled by TIBCO & ESI – one of the firsts in Indian Manufacturing.

The Customer

A flagship company of one of the earliest engineering conglomerates in India, the Customer is a leader in the manufacturing of diesel engines, agricultural pump-sets and generating sets. With four state-of-the-art manufacturing units in India, it has also expanded into international markets including Dubai, South Africa, Kenya, Nigeria, Middle East and Africa.

The Need

The Customer had been using PTC's Windchill PDM Link since 2006 for managing their design release and change management process. There was a single Bill of Materials (BOM) which was being used for both Engineering and Manufacturing purpose. This increased the complexity and the time required to implement any changes driven by manufacturing, as the same instance of BOM had to go through both engineering and manufacturing changes concurrently. The complex update process created unnecessary delays in manufacturing that were dependent on the changes to be implemented. With a separate Manufacturing BOM (mBOM), the changes led by manufacturing could be made quickly and moved into Oracle ERP through an automated integration between PLM and ERP system.

The Solution

TITC Infotech helped the Customer transition smoothly to Windchill 10.1 platform for managing their new product development. As planned, two separate BOMs were created – Engineering BOM (eBOM) for design engineering, and Manufacturing BOM (mBOM) for manufacturing, each with their own Change management process. A common design release process was initiated to streamline all the approved designs to manufacturing. MPMLink was implemented to extensively manage the eBOM to mBOM process including concepts of Primary and common BOM methodology. The PLM system was then integrated with their Oracle ERP using TIBCO ESI framework as a middleware. This enabled publishing of Part & BOM through change notice and extensive validation of mBOM before publishing to Oracle ERP for managing downstream manufacturing transactions.

Highlights:

- Some of the many firsts in an Indian Manufacturing context:

  - E-BOM and M-BOM management through MPM Link

  - Seamless integration of Windchill PLM with Oracle ERP through TIBCO and ESI logic

  - Implemented KIT for handling DFM, Procurement & Validation

  - Primary and common BOM management methodology of ERP in PLM

- Developed "Knowledge Platform" for IT consolidation, which decreased cost of ownership, enhanced usage and reduced the cost of maintenance and customization

- Enabled Engineering Change Management Process for all part types like Proto, Semi-finish and regular part

Business Benefits

- Significant reduction in response time to manufacturing changes while maintaining product integrity

- Streamlined design release process enabled faster release of drawings to manufacturing

- Revision independence with multiple BOMs giving better control of design data

- Improved design productivity, through standardisation and reuse of existing parts

- Paved roadmap to move into Microsoft platform with active directory integration & possible SharePoint integration

ITC Infotech's PLM Practice

ITC Infotech shares a decade-long strategic partnership with PTC and is a leading provider of PTC Suite of Products. We have Centres of Excellence in specialized PLM technologies and are frontrunners in innovative methods, processes and skills in the PLM space. ITC Infotech has the largest number of PTC certified consultants and seasoned industry experts within depth knowledge of PLM.

The company has worked with some of the leading Aerospace & Defence, Automotive, Industrial Equipments, Hi-tech, Oil & Gas, Retail, Apparel and Footwear (RFA) and Consumer Goods companies across the world.

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