

Issues and Challenges with Product Life Cycle Management (PLM) System Implementation Guidelines

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Abstract: Deployment of PLM System is today's need for all commercial organizations. For successful implementation of PLM system solution, Commercial organisation adopt various available implementation guidelines. Sometime available implementation guidelines may results into un-successful implementation/ re-implementation. Each Unsuccessful / re-implementation leads to waste of time, money & efforts. There is a need for analysis of current available implementation guidelines with bit detailing in real PLM implementation project in Indian context specifically process manufacturing industry. Paper will provide reliable guideline for successful PLM implementation specific to Indian Process manufacturing Industries. It will reduce the failure rate of PLM implementation. It will provide faster PLM implementation. it will save cost & efforts for implementation.

Keywords: PLM System, successful, specifically process manufacturing industry.

I. INTRODUCTION

A. What is PLM (Product Lifecycle Management)

Companies dealing with product related activities facing more challenges year on year due to complex development process, complex workflow system, complex product data, and large team working across the globe, Aligning corporate strategy with product development/commercialization. Companies having pressure on cost reduction & shorter time to market for new products. Product lifecycle management (PLM) systems can be considered as important enablers for achieving true coordination and effective management of product development processes. PLM Strategy is used to work upon complex product related activities which works with People, Process & Technology. PLM Strategy start with product concept to commercialization and ends with product retrials. Product Life Cycle Management runs through various phases of product.

1. Concept
2. Design & Develop
3. Prototype & Pilot
4. Launch & Ramp
5. Production
6. Service & Support
7. Phase out & Retrials

Product Life Cycle Management Solution is IT based Tool which enables PLM Strategy.

II. AVAILABLE GUIDELINES

Zimmerman (2008) summarises findings from a study of a more than ten-year long PLM implementation project. In order to ease future projects, he recommends controlling project progression, dividing the project into sub-projects, and establishing a coherent multi-layered PLM architecture. A summary of the above guidelines is presented in Table 1. A more detailed description of the above PLM implementation guidelines has been compiled by Bokinge (2011).

TABLE 1:

Guideline category	Guideline
Project process	<ul style="list-style-type: none"> • Divide project into sub-projects , perform a pilot project • Conduct pre-study prior to system selection plan carefully • Follow-up and control project process • Be prepared to adjust the plan when business changes
Goals	<ul style="list-style-type: none"> • Define benefits for all stakeholders • Aim to satisfy rather than optimise • Do not force the same solution on the whole organisation • Carefully estimate the magnitude of change
System and process design	<ul style="list-style-type: none"> • Establish a coherent PLM architecture • Improve processes prior to or simultaneously with PLM project • Align processes with system capabilities • Only roll out tried software releases • Minimise Customisation
Organisation	<ul style="list-style-type: none"> • Ensure management support • Involve users from all departments and disciplines

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	<ul style="list-style-type: none"> • Authorise the project participants • Use expertise from third parties • Educate system users
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Available Guidelines suggested that “The concept of PLM must be well understood and agreed upon by all the stakeholders. The scope of PLM is very large, and it requires lot of efforts; it is difficult to maintain stakeholders’ interest and support during such long endeavors”. PLM Implementation team was able to keep all the stakeholder onboard by conducting monthly review meetings & some time fortnightly meeting to ensure the effective implementation & kept the right directions which resulted into successful implementation of PLM at Global Group. During Defining Future Business Processes ‘To-Be’ assumption was taken that only technology lead BPR will be carried out accordingly project timelines was taken but while actual execution massive business process re-engineering & business process improvement was carried out as business took this project as opportunity to correct their process before configuring into oracle agile PLM tool. Which resulted into major impact on timelines. Further SDLC (software development lifecycle) was selected as waterfall but during actual solution design & implementation for some part of developmental phase & major part of commercial campaigns it become agile methodology. The Impact was discussed in PLM Core Committee and got approval for revised timelines.

1. Issue & Challenges

- 1.1. How the actual PLM implementation is done using available guidelines.
- 1.2. What are the key issues and challenges faced during implementation while using available guidelines.
- 1.3. Up to what extent available Implementation guideline used.

2. General Approach

Research was conducted by self-association as implementation team member. Research period was Jun 2015 – Apr 2017. Empirical study was done at Indian multi-national company in the chemical intermediate manufacturing industry (called Global Group).

- 2.1. Project Initialization, Planning, Monitoring & Control
- 2.2. Current Business Process ‘AS –IS’ Capturing & GAP Analysis
- 2.3. Define Future Business Processes ‘TO-BE’
- 2.4. Design & Software Configuration
- 2.5. UAT, Training and Go-Live

III. CONCLUSION & FUTURE WORK

Bokinge (2011)’s guidelines is not very detailed for full blown PLM Solution Implementation so the guideline being supplemented by adding guidelines points in the Bokinge(2011)’s guidelines.

Guideline category	Guideline(Level 1)	Guideline (Level 2)
Project process	<ul style="list-style-type: none"> • Divide project into sub-projects , perform a pilot project • Conduct pre-study prior to system selection plan carefully • Follow-up and control project process • Be prepared to adjust the plan when business changes 	<ul style="list-style-type: none"> • Select the Methodology Waterfall / Agile • Define the project Review Frequency • Do Project Initialization, Planning, Monitoring & Control
Goals	<ul style="list-style-type: none"> • Define benefits for all stakeholders • Aim to satisfy rather than optimize. • Do not force the same solution on the whole organization. • Carefully estimate the magnitude of change 	<ul style="list-style-type: none"> • Prepare Detailed Change Management plan • Create the business need / Issues document in As-Is study. • Check whether Benefits get reaped after project closure.

System and process design	<ul style="list-style-type: none"> • Establish a coherent PLM architecture • Improve processes prior to or simultaneously with PLM project • Align processes with system capabilities • Only roll out tried software releases • Minimise Customization 	<ul style="list-style-type: none"> • Detail out the Business Process Re-engineering /Business Process Improvement & its impact on project timelines • Detail out scope of work with actual users.
Organisation	<ul style="list-style-type: none"> • Ensure management support • Involve users from all departments and disciplines • Authorise the project participants • Use expertise from third parties • Educate system users 	<ul style="list-style-type: none"> • Use Change Management Methodology • Impart Intensive Training & Hand on practice to Users. • Create User Operational User Manual.

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