



BENEFITS -
Building an Expertise Network
for an Efficient Innovation & Training System

**Toward Supplier Maturity Evaluation In Terms Of PLM
Collaboration**

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BENEFITS

Building an Expertise Network for an Efficient Innovation & Training System (BENEFITS) is an project supporting by European Union through the European Program INTERREG IVA France-Channel-UK

Objectives of the BENEFITS (W3)

- ❑ Investigate the requirements, problems and benefits of the PLM-based solutions for extended enterprises (including SMEs and OEMs)
- ❑ In particular the integration of suppliers product development processes with OEMs through the PLM

Aim of this presentation regards to BENEFITS objectives

Provide supplier (SMEs) a framework to find their level of relationship with OEM and the steps that they can improve it

Product life cycle management

- Product life cycle management (PLM) is the business activity of managing, in the most effective way, a company's products all the way across their life cycles, from the very first idea for a product all the way through until it's retired and disposal of **[John Stark 2011]**
- For the analyst (**CIMdata**), PLM is defined as: “a strategic business approach that applies a consistent set of business solutions in support of the collaborative creation, management, dissemination, and use of product definition information across the extended enterprise from concept to end of life – integrating people, processes, business systems, and information.”
- (**IBM**) defines PLM as “...a strategic approach to creating and managing a company's product-related intellectual capital, from its initial conception to retirement”
- For the PLM Interest Group (**PLMIG**), PLM includes research, management of customer requirements, product development CAD, CAM, simulation, rapid prototyping and virtual concurrent engineering, product / process design, sourcing of components, machining digital control, collaboration via the web with customers and suppliers. PDM is the IT Platform for PLM, the terms 'PLM System' and 'PDM System' mean the same thing, and are interchangeable

PLM Concept

- There are at least five questions that must be taken into account in the management of the life cycle of the product [Liu et al, 2009]

When: the step where management occurs

Who: people, organizations involved in PLM

What: objects to manage in the PLM

Why: challenges, motivations and objectives of PLM

How to: the features and technologies that support PLM

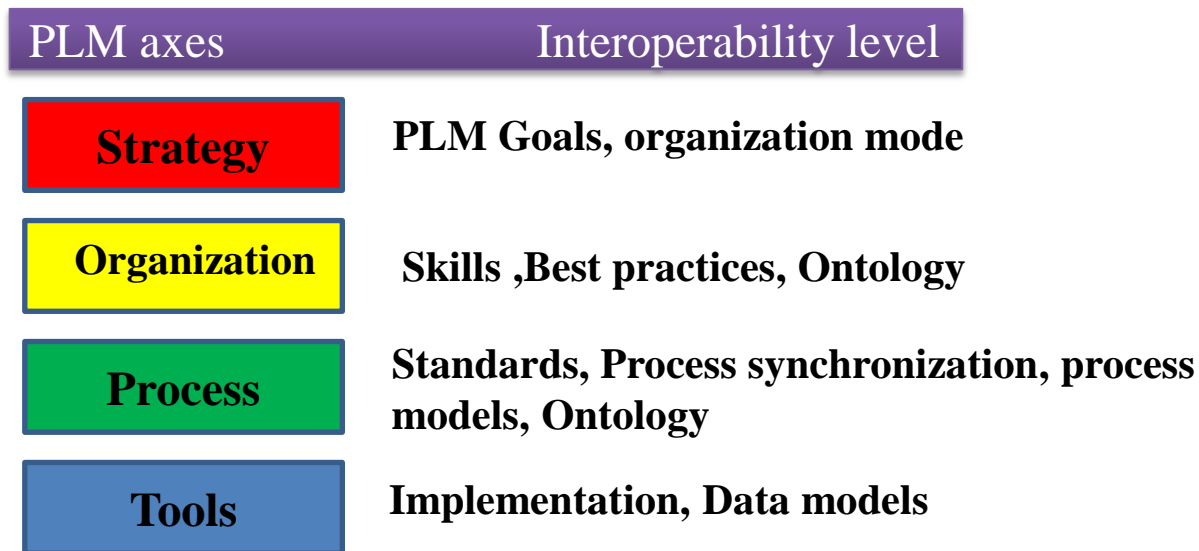
(Strategy / Process)

(Organization)

(Process)

(Strategy)

(Tools)



PLM maturity

The idea of the PLM maturity was to describe, on a rough level, how a company and its management team can develop and extend the use of a corporate-wide PLM concept and related processes and information systems. [Saaksvuori and Immonen 2008]

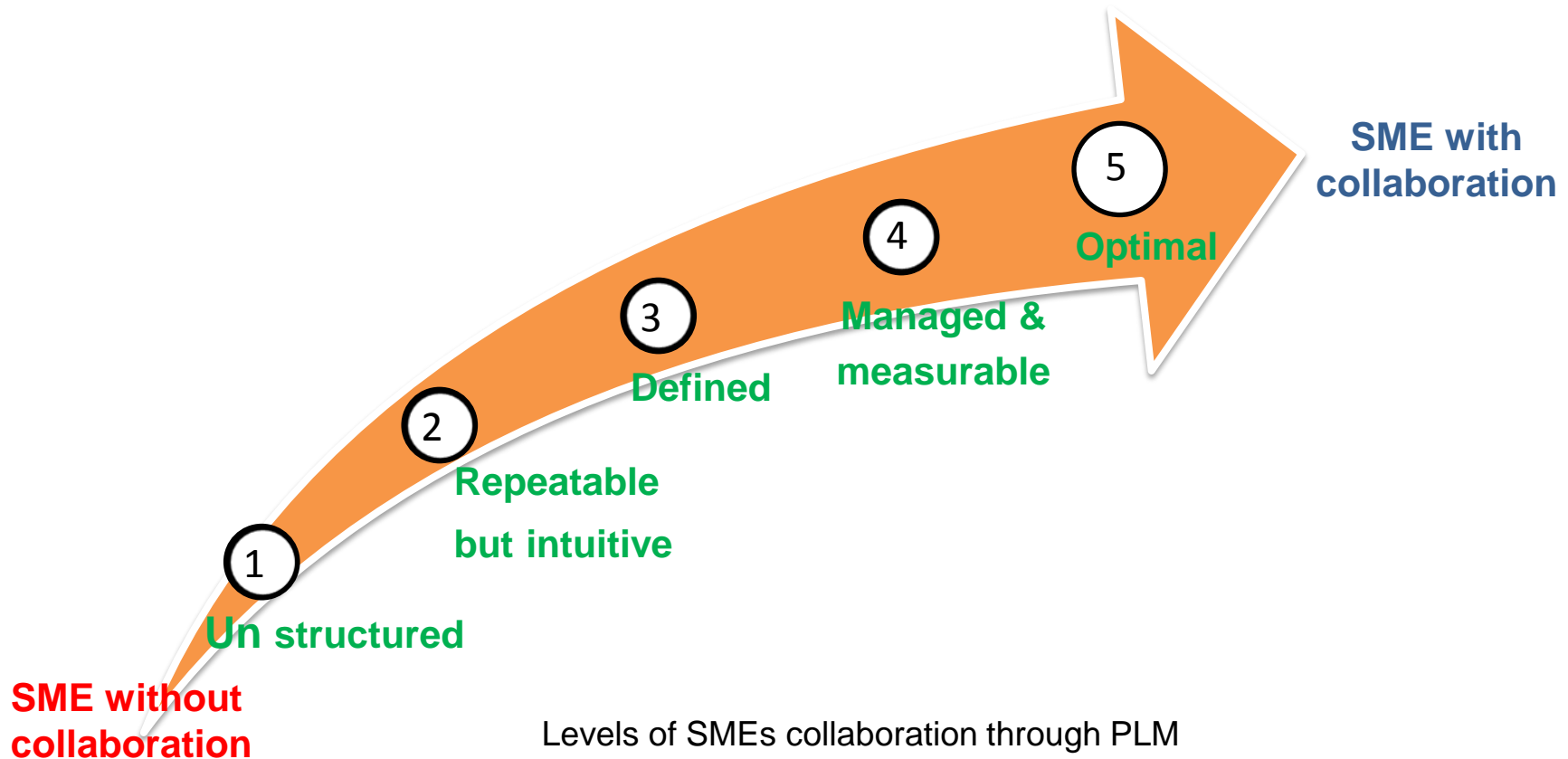
Is a framework originally applied in the information systems area. The CMM has five levels: Initial (ad hoc), Repeatable, Defined, Managed and Optimized.

For instance reuse of design maturity can begin from 'easier for engineers to design new than reuse (Initial)' towards 'automated searching of BOM for similar components (Optimized)'.

Further a study applied on a PLM maturity framework adapting the Capability Maturity Model. [Grieves and Batenburg et al.assessment 2006]

Research Question

- ❑ What are the activities of each level of co-PLM?
- ❑ What is the actual level of collaboration?
- ❑ What are the requirements elements to improve the level of collaboration?



Developed Maturity Collaboration Model

Level	Working Practice	PLM axes			
		Strategy	Organization	Process	Tools
1	Unstructured collaboration	Have started to recognize PLM topic in terms of collaboration and its importance have been agreed	Have begun to Select supplier after zooming potential ones	Work must be done to develop the PLM concept and standards	No advance communication and traditinal management is used
		Work must be done to define the PLM concept	There is no defined organization concerning lifecycle management; all lifecycle and product management issues are resolved by individuals on a case-by-case basis.	Difficulties in finding past documentations	
		Have begun to identify potential supplier		There is no defined process concerning lifecycle management and collaboration	

Questionnaire

For improving our framework we need to propose a structure of questionnaire and apply it to different enterprises (OEM/Supplier) to have feedbacks. These feedbacks will be used to improve the table for the levels validation.

For this questionnaire we need to choose the right person for having the best answer. That's why we adopt different levels in our approach. These levels will be as

- Strategic level: will address Top management.
- Organization level : will address managers, departments responsible,
- Process level: will address managers and engineers, and team head etc.
- Tools level: we will address all technical staff

Questionnaire

In order to identify the right level for each activity, questions will be addressed to the

Boss/Managers and structured as follows:

In your opinion, what is the best definition of PLM concept?

Is it defined in your enterprise?

- If No = L1
- If Yes \geq L2

Is it formalized in your enterprise?

- If No = L2
- If Yes \geq L3

Is the PLM concept integrated uniformly throughout your enterprise?

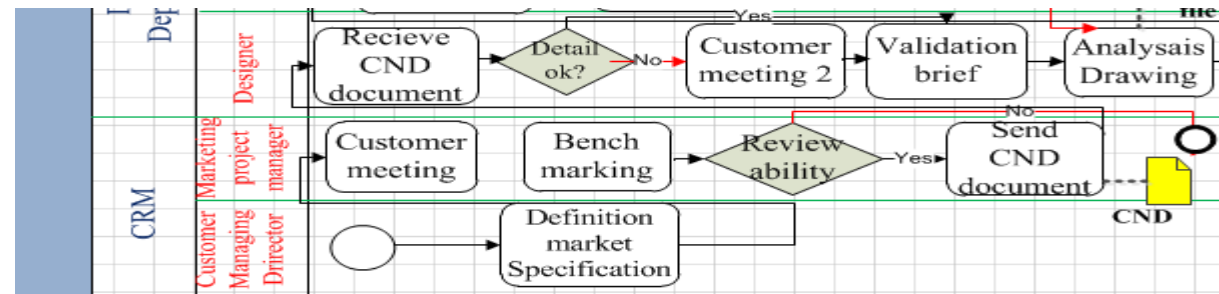
- If No = L3
- If Yes \geq L4

Example of Strategy for strategy- level1

Have plan to develop the design for modular of the product family
Have plan to have strong contact with customer
Have plan to organize the OEM on business unit with flat, cross-functional structure
Have plan to define business process across PLM
Have plan to define and focus on design product family
Have plan to have regular meeting with managers of department to well-defined management the process
Have plan to develop and work on virtual re-tests of prototypes
Have plan for training the employees as they are key assess
To focus on importance of product data
Have plan to work on security risks
Plan to have international customers and modern techniques and process
To focus on R&D department for new products ,technique and process
Plan to focus on information system as a key factor to achieve business objectives
Plan to have regular contact with customer to find out theirs needs regards to product development
Plan to define metric that measure the activates of departments in develop family product s or generally products
Plan to defined clearly product development process
To increase the number of employees with vast experience without ages limited
To have commitment to focus on managing the date
Plan to have modern design product development practices and techniques
Plan to profit modern integrated application regards to design product development
Have plan to atomize product development process and digital environment design
Have plan to profit enterprise PDM and integrated between PDM application
Integrated PDM with supplier
To define product data model integrated with supplier
Plan to integrate exists PDM with ERP and CAD systems and PDM uses in suppliers
To profit PDM in PLM framework

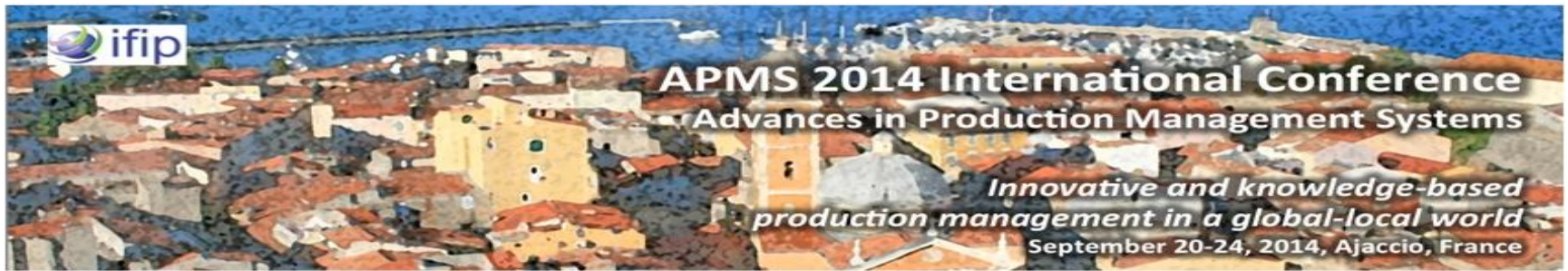
Future work

*SME-Strategy-CRM-
customer project manager
(1-1-1-1)*



Have you any plan to determine market specification based on customer requirement?

- Not at all or Initial plan for market specification based on customer specification (level 0)
- Plan to have regular meeting with customer to find out their needs regards to product development and market specification (level 1)
- Plan to develop initial program to focus on customer in relate of market specification and customer requirements (level2)
- Have plan to revise market specification regular (level3)
- Market specification have been adopted to customer need's properly(level4)
- There is a best practice of synchronization with customer(level5)



Thank you for your attention

