Developing a Sustainable PLM Strategy

CIMdata PLM Leadership Webinar Series—14 January 2016

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CIMdata® Global Leaders in PLM Consulting
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Presenter’s Profile

Your presenter’s professional background

- Peter A. Bilello, President
  - More than 25 years of experience in the development of IT solutions for research, engineering, and manufacturing organizations worldwide; has run numerous projects in PLM analysis, selection, implementation & management, synchronous and lean manufacturing consulting & software engineering
  - B.S. in Computer Science (minor in Physics) & M.S.E. in Manufacturing Systems Engineering
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Our Mission...
Strategic management consulting for competitive advantage in global markets

CIMdata is the leading independent global strategic management consulting and research authority focused exclusively on the PLM market.

We are dedicated to maximizing our clients’ ability to design and deliver innovative products and services through the application of PLM.

Our Services...
Creating, disseminating, and applying our intellectual capital

Research
• Market research & analysis
• Technology research & analysis
• Reports & publications
• Market news
• Member services...

Education
• Executive seminars
• PLM Certificate Programs
• Technology seminars
• INTI conferences & workshops
• Best practices training...

Consulting
• Strategy & vision
• Needs assessment
• Solution evaluation
• Best practices
• Quality assurance
• Program management
• Market planning...

Delivering strategic advice and counsel through a comprehensive, integrated set of research, education, and consulting services
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Our PLM Transformation Clients...
A sampling of CIMdata’s international industrial clients (2 of 2)

Key Takeaways

Developing a Sustainable PLM Strategy

- Organizations need to define and implement a sustainable PLM strategy
- Sustainable PLM strategies require vision, patience, flexibility, openness, and the willingness to change
- PLM implementation is best handled as an iterative process of improvement
- A sustainable PLM strategy is always linked to the strategic business objectives of the company
- Success = vision + organization + process + provider(s) + approach + environment
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Definition: PLM Sustainability
The need to minimize cost and impact, and closing the PLM value gap

The long-term ability of the PLM solution to provide a maximum return on investment

- Sustainability implies the complete PLM solution (i.e., the software, processes enabled, and support service) is meeting the company’s business needs now and will into the future via continuous and cost effective improvements rather than a series of discontinuous, high-intensity, and costly events

Premise 1

**PLM needs to be built on a solid foundation of business justification as well as set of strategy elements that have been designed to evolve as the business evolves.**

Why is this the case?
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PLM is a Strategic Business Approach
PLM – integrating people, processes, information, and business systems

- Strategic business approach
  - NOT just technologies
  - Consistent set of business solutions
- Collaborative creation, use, management & dissemination of product related *intellectual assets*
  - All product/plant definition information – the virtual product
    - MCAD, AEC, EDA, CASE, analysis, formulas, specifications, portfolio, docs, ...
  - All product/plant process definitions – the virtual processes
    - Processes that plan, design, produce, operate, support, decommission, recycle, ...
- Supports the extended enterprise
- Spans full product/plant lifecycle, from concept to end of life

PLM Spans the Product Life
PLM touches all phases of a product’s life and the entire value chain

PLM Solutions—Information Management across Media, Process, Time, Geography, & Enterprise
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PLM is a Major Business Domain

PLM footprint overlaps and integrates with other major enterprise initiatives

Plan | Define | Build | Service

Virtual Product

PLM

Execution

Physical Product

ERP

Premise II

PLM is at the core of the company—it cuts across all the enterprise’s departments and often includes development partners, suppliers, and customers.

How is PLM evolving?
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The “Platformization” of PLM is Underway

The main ingredients are coming together

- PLM platforms of the future will be the foundation upon which functional capabilities, data, and processes are enabled
  - Everything users need, when they need it, all in one place
  - The near-term goal is to enable the innovation essential to the creation of...physical and digital products, systems (a combination of the physical and the digital), and services

- Some basic definitions:
  - Innovation—The definition and realization of a new solution (i.e., a process, product, service, and/or business approach) to an issue or problem that performs better or delivers more value than any previous solution
  - Product—The physical item, system, and/or service defined, delivered, and supported
  - Platform—A foundation upon which functional capabilities, data, and processes are enabled and executed

The Product Innovation Platform

Defining the Product Innovation Platform

- For product innovation, this extended process enablement must meet the requirements of modern markets and operating models...
  - The innovation process must be fully aligned to customer requirements rather than simply a product-centric process driven by R&D
  - The platform must integrate to a host of organizational disciplines outside of the traditional engineering and program management disciplines
    - These disciplines include compliance (e.g., sustainability and safety), manufacturing, service, marketing...
  - The platform should natively support:
    - Systems modeling and simulation
    - Data Analytics and Visualization
    - Closed-loop decision making
    - Intellectual property management and protection
    - ...
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The Product Innovation Platform
CIMdata’s Enterprise Product Innovation Platform Model

A set of evolving Functional Domains orchestrated by an enterprise level “systems of systems” approach

Premise III

The implementation of PLM is like performing open heart surgery on a person while they run a marathon.

What makes is so complex?
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Typical PLM Implementation Roadmap

Complexity comes in many forms—the best approach...make the complex simple

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PLM Enterprise Architecture Heat Map

Pilot

For illustration purposes only, capabilities aren’t complete nor are they accurate.

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PLM Enterprise Architecture Heat Map

Release 1

PLM Enterprise Architecture Heat Map

Release 2
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PLM Enterprise Architecture Heat Map

Release 3

PLM Enterprise Architecture Heat Map

Release 4
PLM Enterprise Architecture Heat Map

Release 5

Premise IV

PLM is not something you implement overnight and as result, what you define today may not be appropriate tomorrow.

Why does this matter?
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All this requires a company’s PLM strategy to be robust and flexible.

So, what do you do?
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The Product Innovation Platform
Defining the Product Innovation Platform

PLM Investment Sustainability Characteristics

- Mobility
- Usability
- Portability
- Scalability
- Functionality
- Testability
- Sustainability
- Extensibility
- Compatibility
- Upgradability
- Maintainability
- Reliability
- Availability
- Openness
- Adaptability
- Stability
- Localizability
- Installability
- Scalability
- Testability
- Installability
- Upgradability
- Maintainability
- Extensibility
- Compatibility
- Localizability
- Openness
- Adaptability
- Stability
- Reliability
- Availability
- Functionality
- Portability
- Scalability
- Testability
- Sustainability
- Usability
- Mobility

What Else is Needed...
A lot...let me place some strategic emphasis on some key gaps already discussed

- Standards, standards, and more standards...
  - In some way we have too many, and in other ways we don’t have the right standards to support the interoperability and modeling capabilities required

- Openness
  - It is nice to say that a solution is “open,” does it conform to the true definition?

- A PLM community willing and able to accept the need to:
  - Allow others to easily plug into the platform to share & transact
  - Attract participants, both producers and consumers to the platform
  - Foster the exchange and co-creation of value
### Product Innovation Platform Evaluation

*Finally, the main elements being evaluated by industrial organizations*

- PLM-enabling platform providers need to be evaluated by industrial companies based on:
  - The capabilities that enable them to connect to best of class functionality for diverse needs spanning research, design, engineering, sourcing, manufacturing, sales, marketing, and service
  - Platforms that can enable capabilities conducive to innovation, such as business intelligence and analysis functions as well as social networking

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### Premise V1

The evolving nature of a typical enterprise and how PLM strategies should be defined and implemented in a sustainable manner—one that naturally addresses change.

**How to best go about it?**
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**Overall Best Practice Approach**

*Start with the strategy, working down to improve business performance*

- **Strategic business objectives**
- **As-is situation / business issues**
- **External factors / market environment**
- **Define a vision that supports the business drivers**
- **Vision & structures to improve process**
- **Change drivers**
- **Define required support for your processes and organization**
- **Solution drivers**
- **Requirements / information technology**
- **Product structure / data**
- **Requirements / Business processes**
- **Organization**
- **Improved processes & business control**
- **Implement and improve**

**Key Success Factors**

*Key lessons learned from real industrial implementations*

- Strong and consistent management support and leadership throughout the project
  - This may take years!
  - This means investment in people, software, infrastructure, etc.
- Make PLM part of everyone’s objectives
  - People need to be rewarded for doing the right thing
- Create a “pull” for PLM; create the need throughout the organization
- Don’t underestimate data migration, system training, the need for cultural change, and implementation planning
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Keys to Successful Implementations

*Important aspects and issues*

- Use a broad vision and approach
  - People want a business solution, not another system
- Educate senior management & initial team
- Support and do not undermine company culture
- Select a partner; someone who understands your business needs and has a proven solution and track record
- Scope should be well defined and understood
- Use pilot projects; the key to success
  - Pilots per discipline, or department are often possible

**Success = vision + organization + process + provider(s) + approach + environment**

Concluding Remarks

*Developing and implementing a sustainable PLM strategy is a requirement*

- PLM needs to be built on a solid foundation of business justification as well as a set of strategy elements that have been designed to evolve as the business evolves
  - PLM is at the core of the company—it cuts across all the enterprise’s departments and often includes development partners, suppliers & customers
- The implementation of PLM is like performing open heart surgery on a person while they run a marathon
  - This requires PLM to be implemented over time, so what you define today may not be appropriate tomorrow
- A company’s PLM strategy must be robust and flexible
  - The evolving nature of a typical enterprise requires PLM to be defined and implemented in a sustainable manner
    - One that naturally addresses change
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This CIMdata offering is primarily comprised of a set of well-defined, assessment-based PLM education and training certificate programs. These certificate programs are available to industrial companies who are considering and/or implementing PLM, and to PLM technology and service solution providers.

PLM Certificate Program Outline

5-day, 9-session outline for PLM Leadership offering

- **Day 1**: Session 1: Introduction to PLM
- **Day 2**: Session 2: PLM Benefits & Potential Value
  Session 3: PLM Strategy & Solution Definition
- **Day 3**: Session 4: PLM Solution Evaluation & Selection
  Session 5: PLM Implementation, Monitoring & Continuous Improvement
- **Day 4**: Session 6: PLM Process Development & Testing
  Session 7: Integrating PLM within the Enterprise
- **Day 5**: Session 8: Expanding PLM Across the Value Chain
  Session 9: Configuration Management’s Role in PLM
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What Others Are Saying
A sampling of feedback received from past certificate program participants

“A must attend program for anyone that is planning to participate in PLM selection or implementation activities at their organization.”
—Shinod Kumar, Edwards Lifesciences, USA

“An excellent overview of all PLM and it’s fit to companies. Good insights that can avoid many troubles in implementation.”
—Paulo C L Villaca, Embraer, Brazil

“I wish we had done this before we started our PLM effort…”
—Jeff Burk, Whirlpool, USA

“Hazy about PLM? Come to CIMdata and clarify.”
—Mrs. B. Uma Prasad, Bharat Heavy Electricals Ltd., India

“Very valuable for business, not only functional and IT oriented; very good quality and professional.”
—Philippe Gautreau, PCO Innovations, France

2016 PLM Certificate Class Schedule*
Join us, and get educated about PLM

- March 7-11 – Ann Arbor, MI USA
- June 6-10 – Amsterdam, The Netherlands
- October 3-7 – Boston, MA USA
- December 5-9 – Santa Clara, CA USA
  - Custom & on-site programs by request

Special Discount: 15% off!
Sign up and pay by February 11th 2016

*Some dates may be subject to change
Questions?
*Please use the GoToMeeting chat panel*

- We’re hoping that the anonymity of the chat window might help participants ask more questions.
- If you want to ask a question on the record, we’ll certainly let everyone know you’re asking.
- The most important thing is interaction – let us hear from you on the call.

Next CIMdata Leadership Webinar

- Please join us on February 11, 2016 for the next Complimentary CIMdata Educational Webinar.
- Dr. Keith Meintjes, Executive Consultant, CIMdata.
- “Simulation Governance: Managing Simulation as a Strategic Capability.”
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