Developing a Sustainable PLM Strategy

CIMdata PLM Leadership Webinar Series—14 January 2016

PLM Leadership

Developing a Sustainable PLM Strategy

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14 January 2016

#cimdatawebinar

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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.

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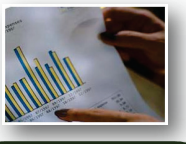
Our Services...

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
- Int'l 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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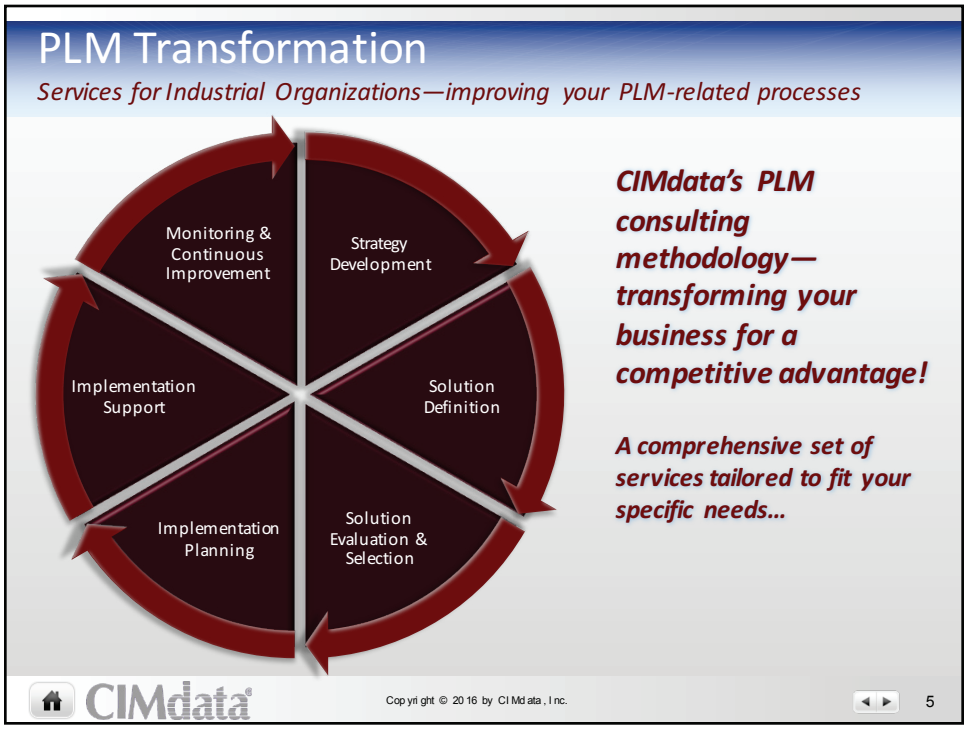

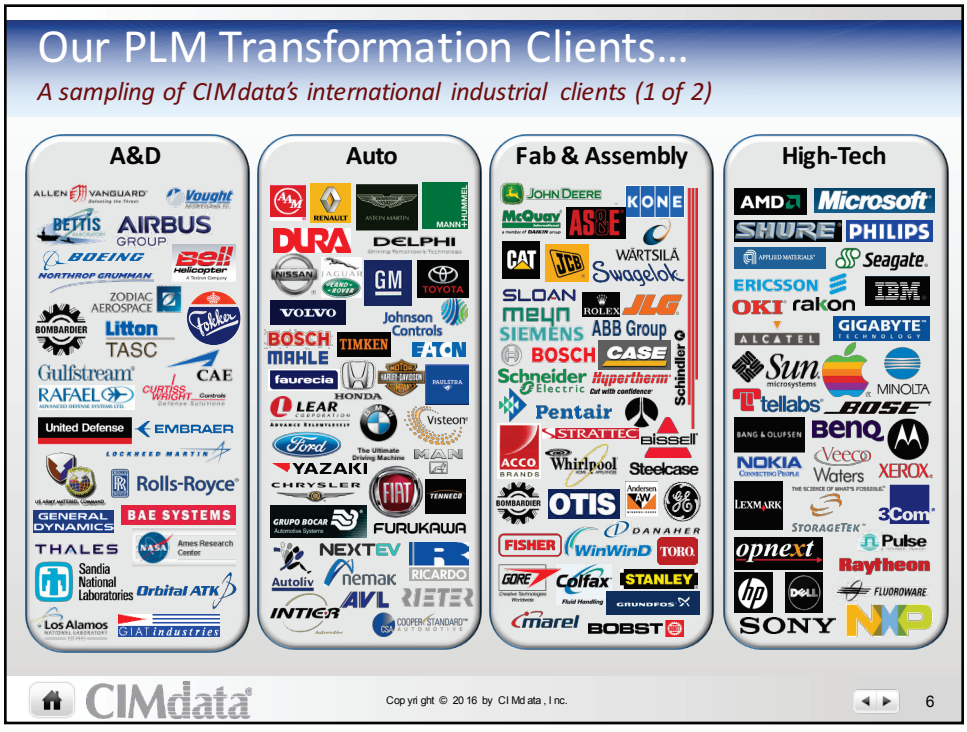

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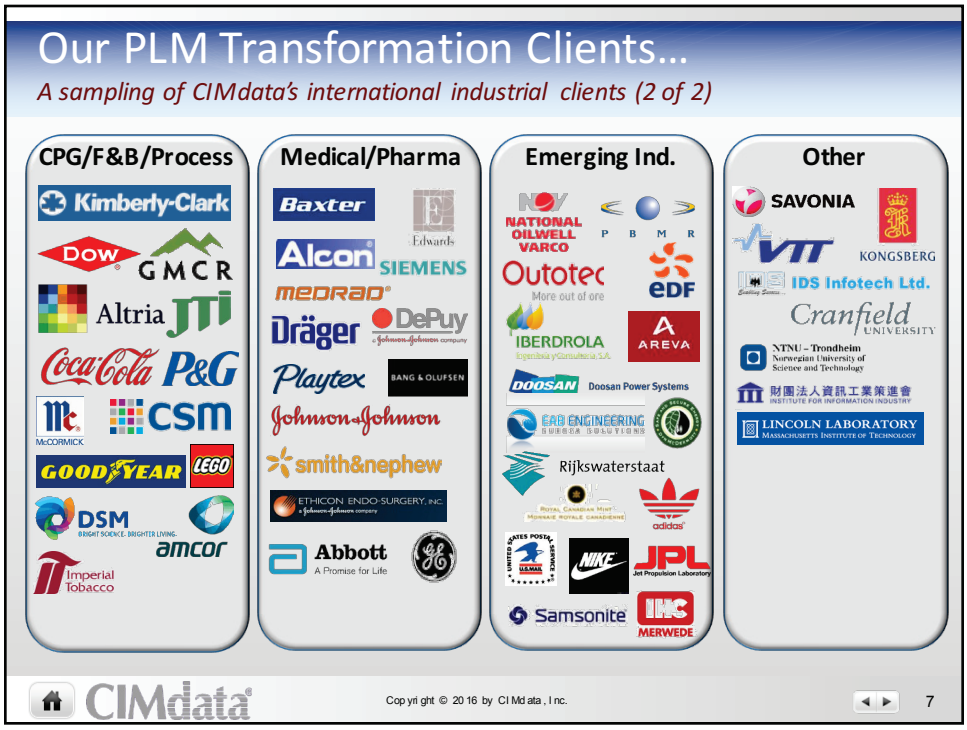

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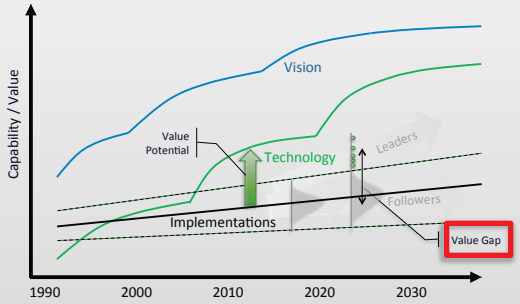
Definition: PLM Sustainability

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



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Premise I

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

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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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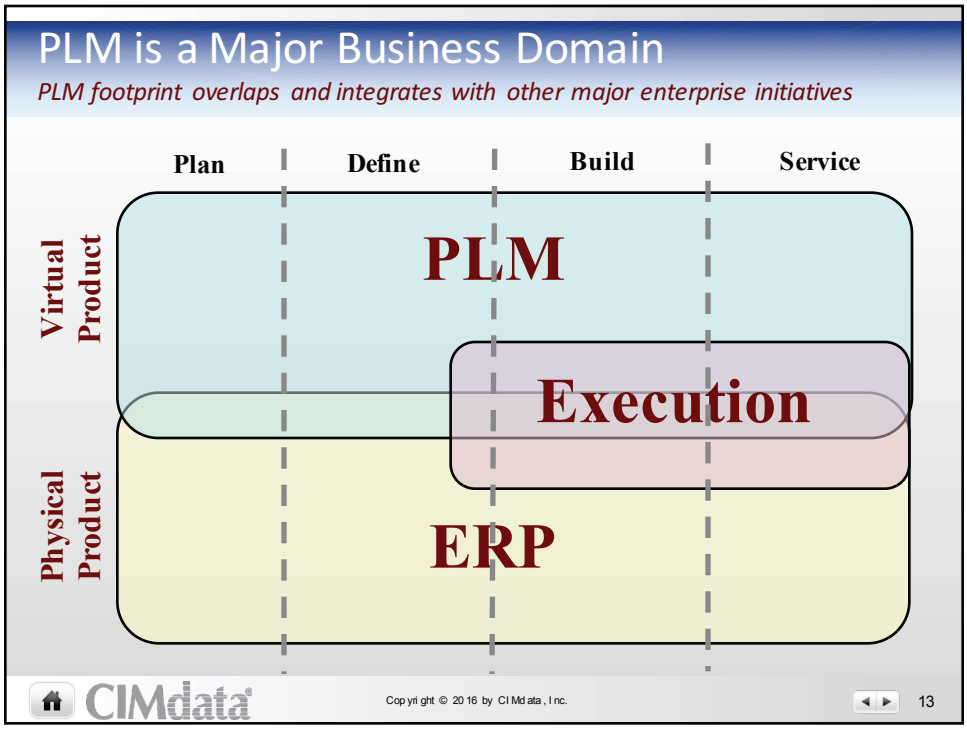

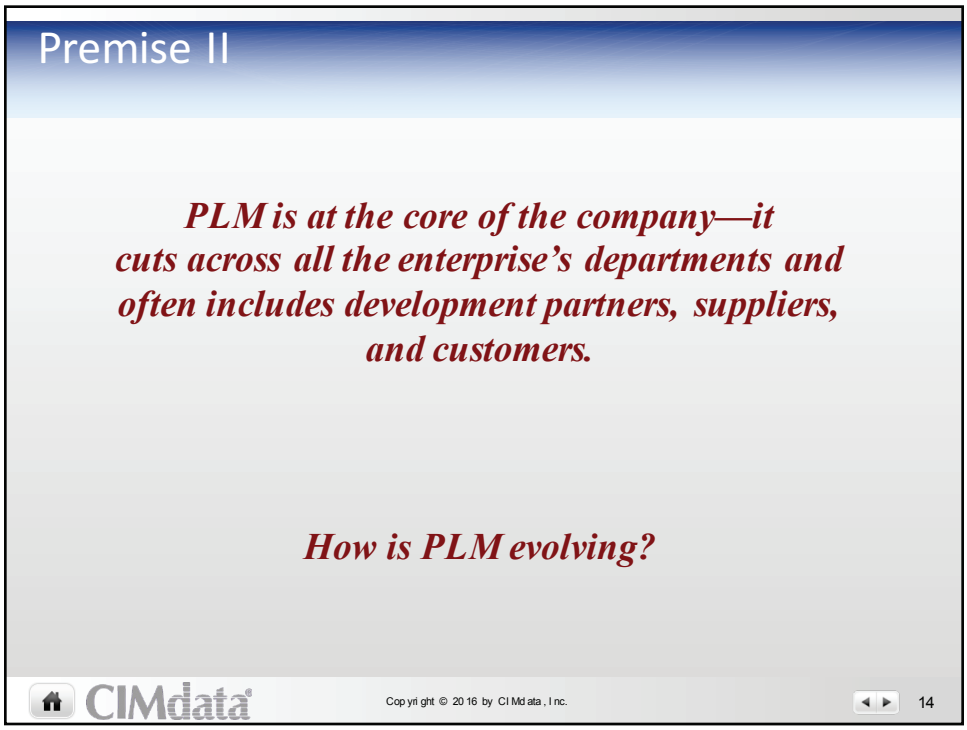

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The "Platformization" of PLM is Underway

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

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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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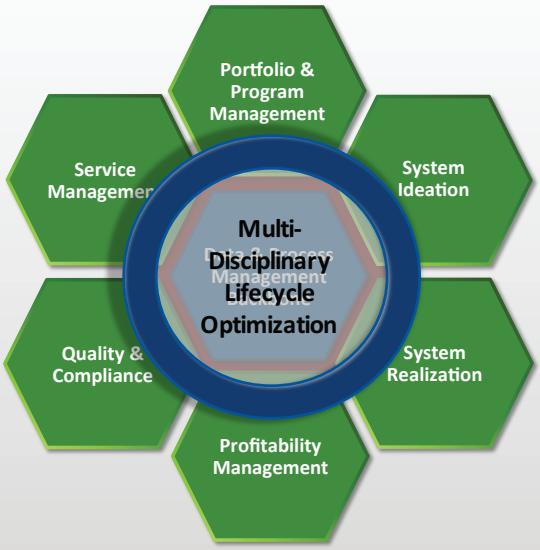
The Product Innovation Platform

CIMdata's Enterprise Product Innovation Platform Model



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

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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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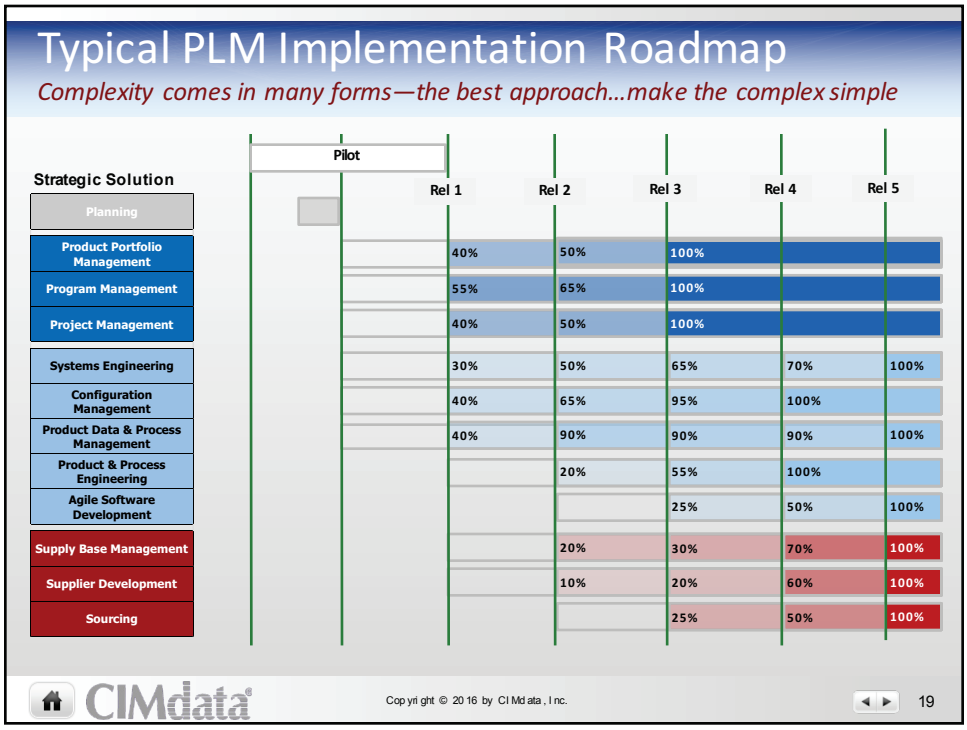

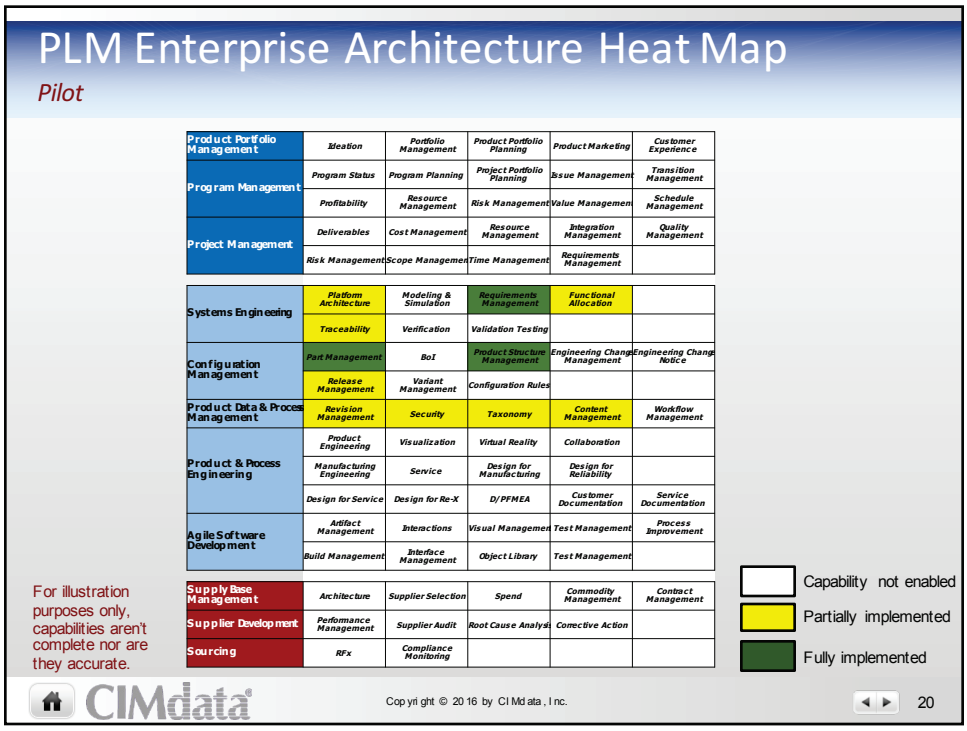

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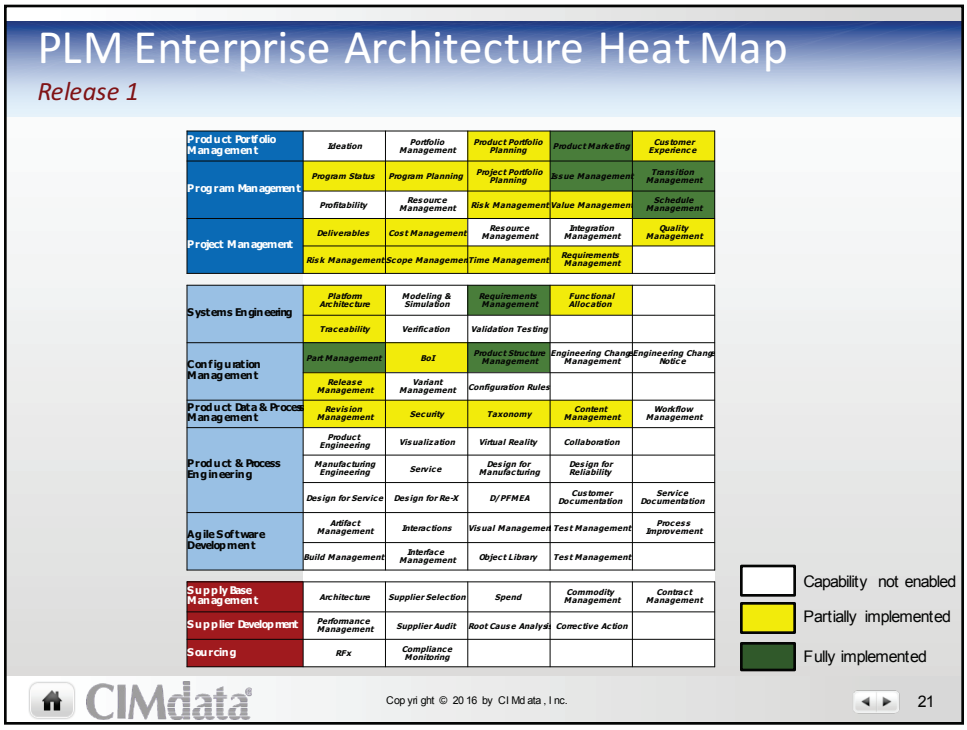

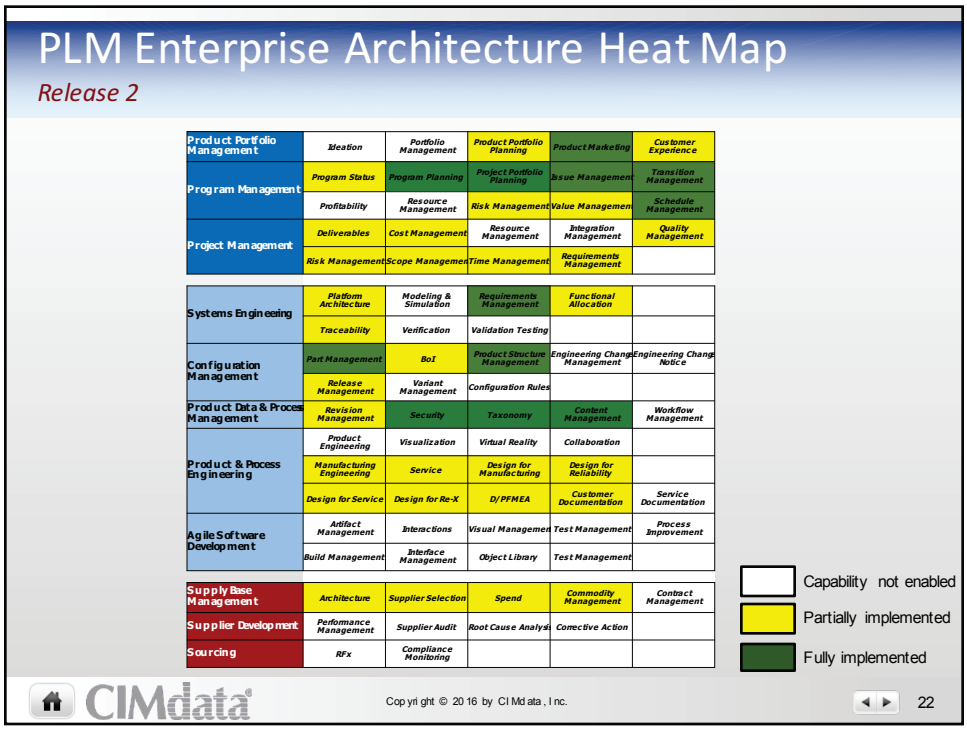

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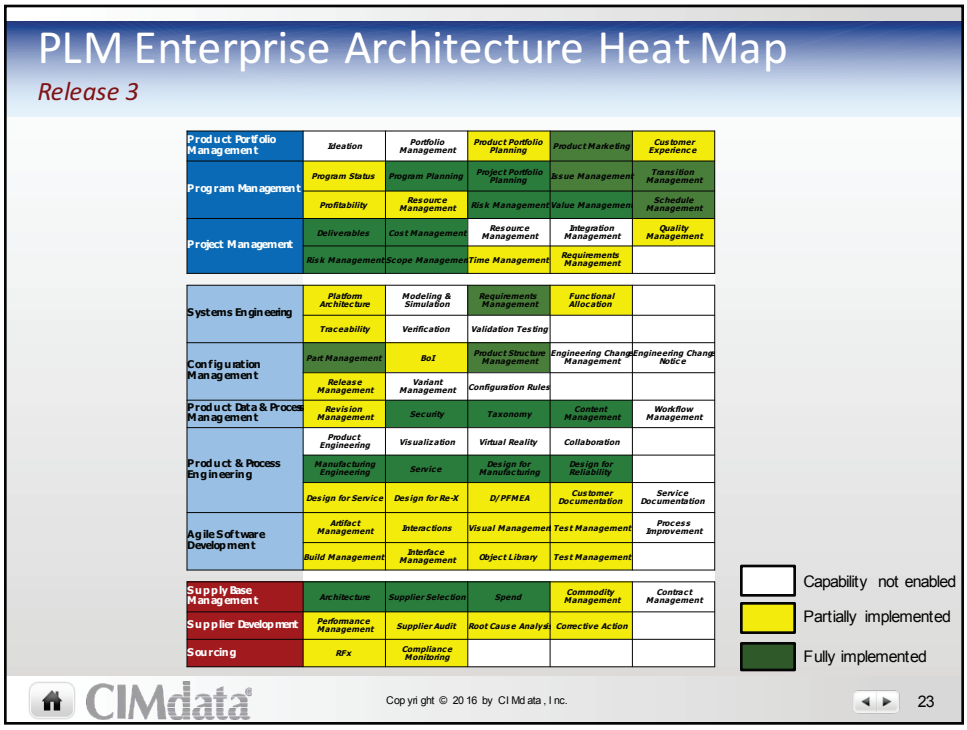

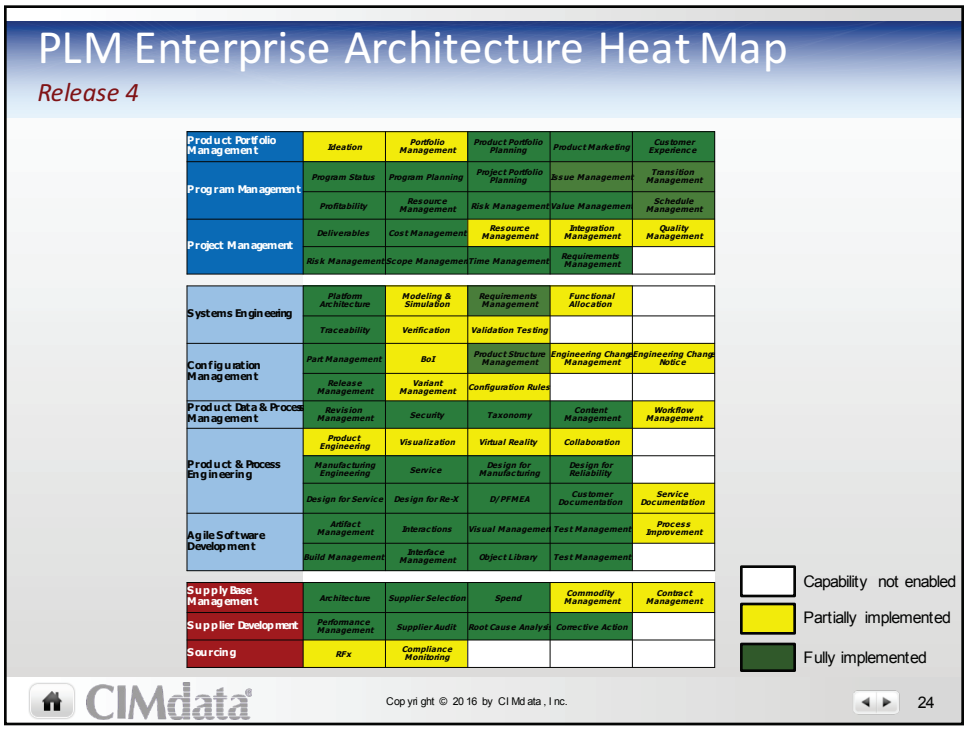

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PLM Enterprise Architecture Heat Map

Release 5

Product Portfolio Management	Ideation	Portfolio Management	Product Portfolio Planning	Product Marketing	Customer Experience
Program Management	Program Status	Program Planning	Project Portfolio Planning	Issue Management	Transition Management
	Profitability	Resource Management	Risk Management	Value Management	Schedule Management
Project Management	Deliverables	Cost Management	Resource Management	Integration Management	Quality Management
	Risk Management	Scope Management	Time Management	Requirements Management	
Systems Engineering	Platform Architecture	Modeling & Simulation	Requirements Management	Functional Allocation	
	Traceability	Verification	Validation Testing		
Configuration Management	Part Management	BoI	Product Structure Management	Engineering Change Management	Engineering Change Notice
	Release Management	Variant Management	Configuration Rules		
Product Data & Process Management	Revision Management	Security	Taxonomy	Content Management	Workflow Management
Product & Process Engineering	Product Engineering	Visualization	Virtual Reality	Collaboration	
	Manufacturing Engineering	Service	Design for Manufacturing	Design for Reliability	
	Design for Service	Design for Re-X	D/PFMEA	Customer Documentation	Service Documentation
Agile Software Development	Artifact Management	Interactions	Visual Management	Test Management	Process Improvement
	Build Management	Interface Management	Object Library	Test Management	
Supply Base Management	Architecture	Supplier Selection	Spend	Commodity Management	Contract Management
Supplier Development	Performance Management	Supplier Audit	Root Cause Analysis	Corrective Action	
Sourcing	RFx	Compliance Monitoring			

Capability not enabled

Partially implemented

Fully implemented

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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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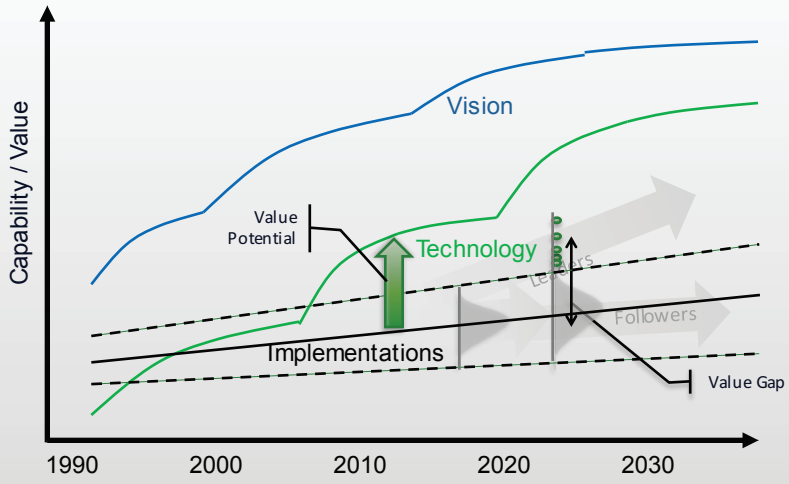
PLM Value Gap

PLM implementation isn't a one time activity



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Premise V

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

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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

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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 VI

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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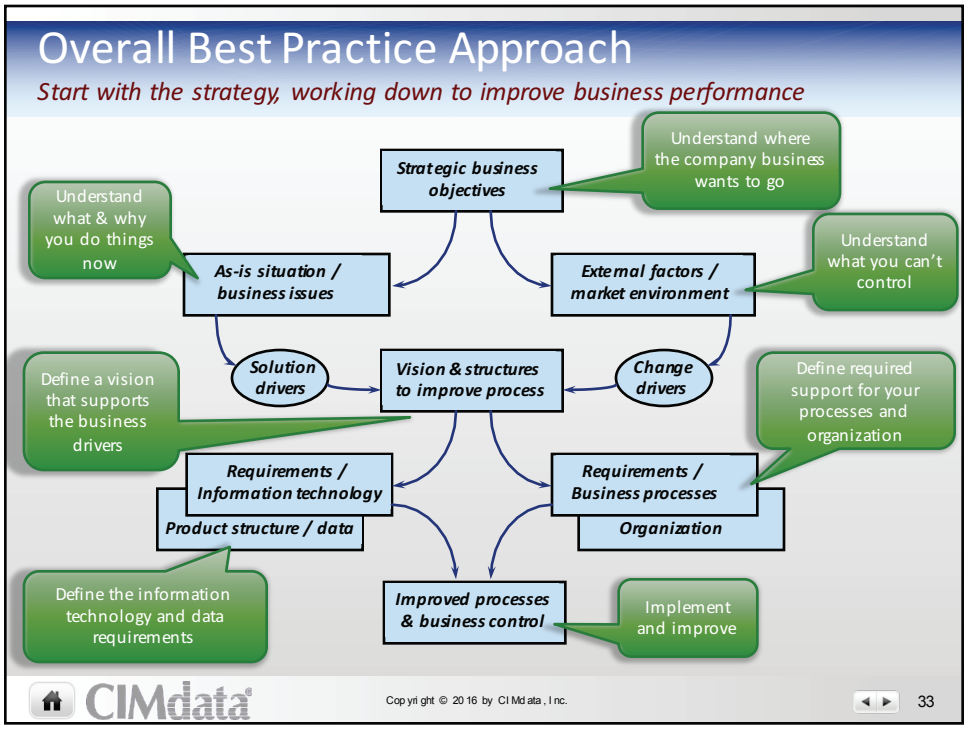

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Keys to Successful Implementations

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

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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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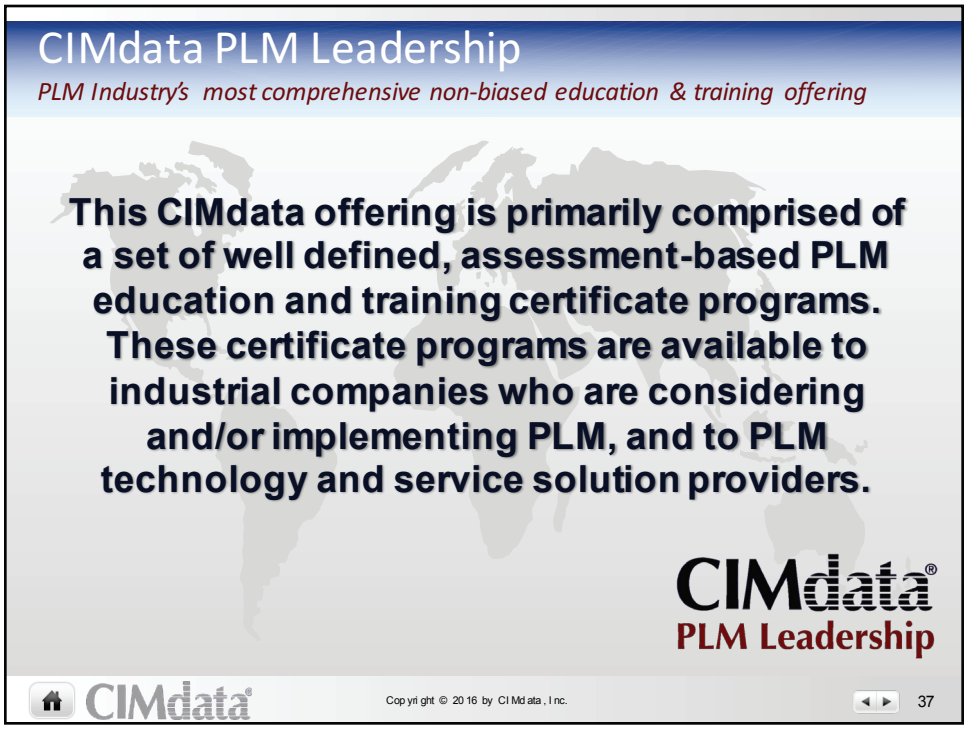

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What Others Are Saying

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*

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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

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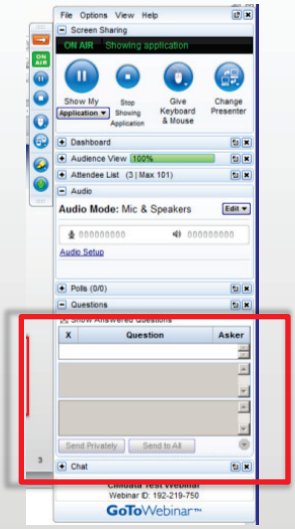
Questions?

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



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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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