

PLM Best Practices Drive Value

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Global Leaders in PLM Consulting
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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.



PLM Best Practices

APLM should be all about achieving business value

- Employing best practices helps organizations achieve business value from their PLM strategies
- For PLM—assure that PLM-enabling tools are both selected and implemented properly
- For business processes—streamline and improve how the business operates and its ultimate success



PLM – CIMdata's Definition

PLM: enabled by a product innovation platform

- 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, ...
- An innovation platform that supports the extended enterprise
- Spans full product/plant lifecycle, from concept through life



PLM Spans the Product Life

PLM touches all phases of a product's life across the entire value chain

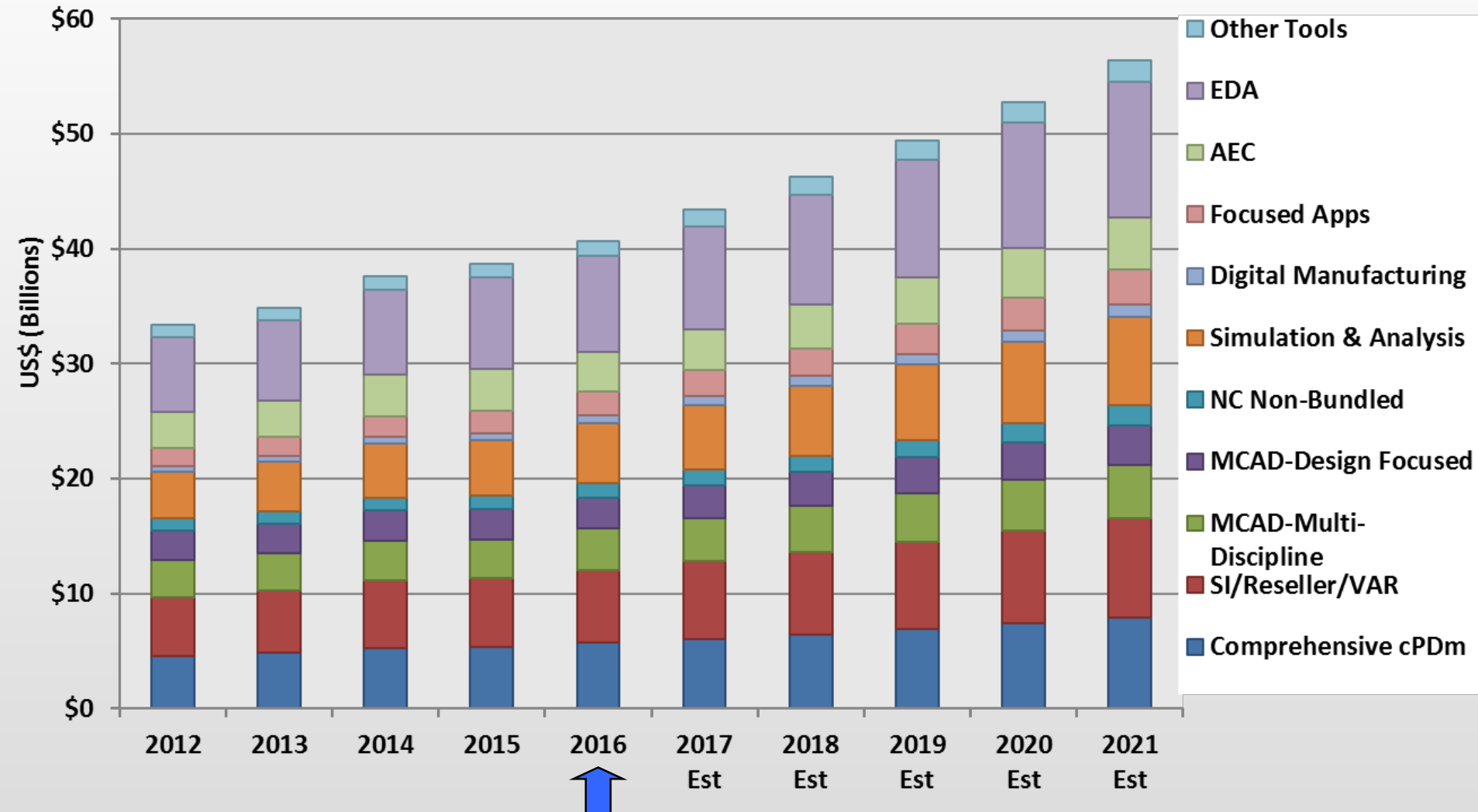


PLM Solutions—Information Management across Media, Process, Time, Geography, & Enterprise



PLM Investments

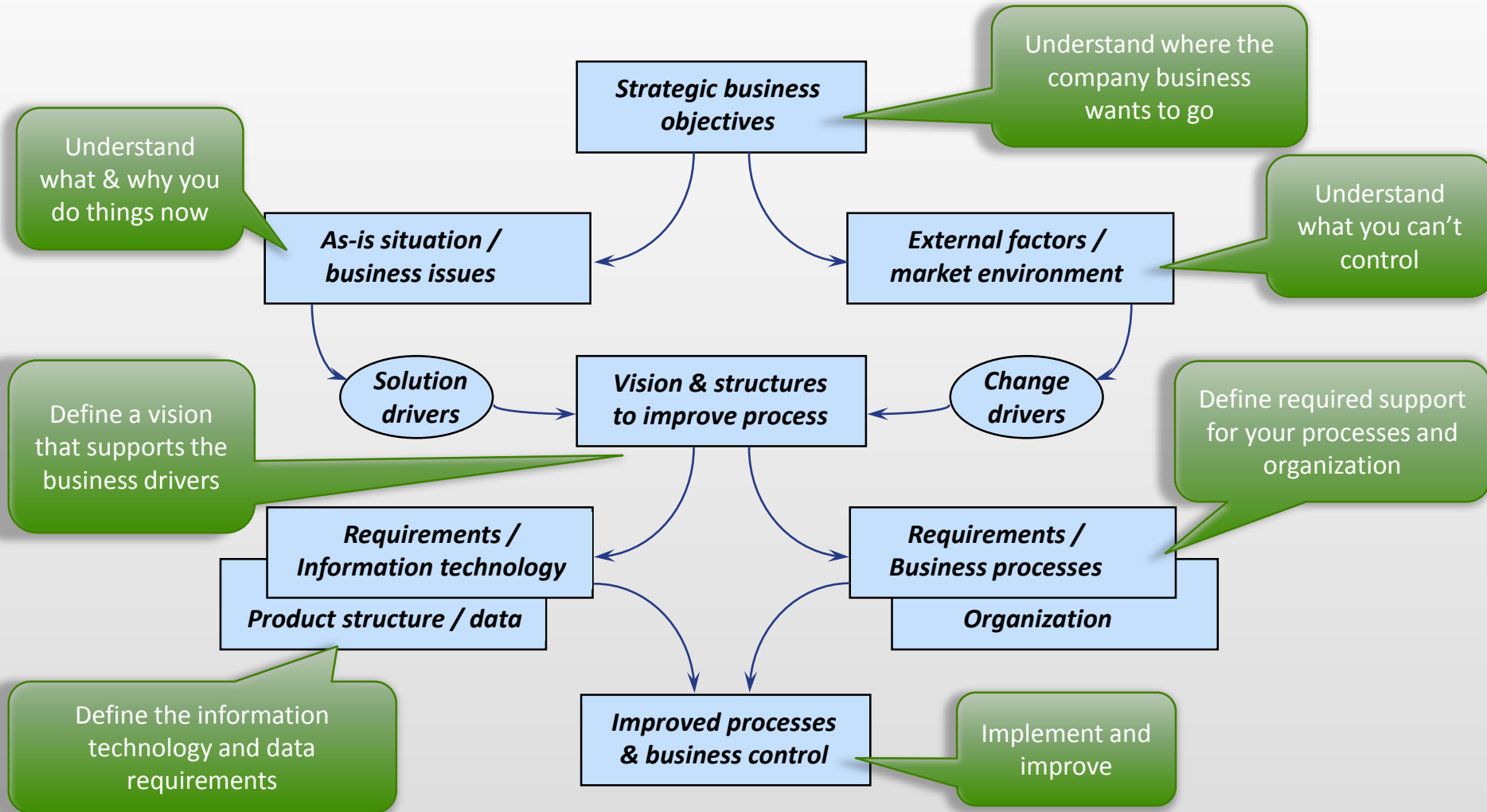
Market history and forecast – software + services



Revenues presented are CIMdata estimates

Overall Best Practice Approach

Start with the organization's strategy to improve business performance



Best Practice Evaluation Tools

Evaluate potential PLM solutions with respect to how they support business



- Request for Proposal/Quotation
 - Indicates the solution's technical capabilities and fit
- Benchmark/Proof of Concept
 - Measures the product's technical capabilities
 - Measures the solution provider's performance and their ability to meet specific key requirements
- Solution Provider Profile
 - Measures the solution provider's business health and stability
- Solution Provider Partnership Potential
 - Measures solution provider's capabilities verses your critical success factors
- Customer Visits
 - Do they have good references in our industry?
- Total Cost of Ownership
 - Measures the cost of ownership over an extended period of time

Top 10 Reasons PLM Projects Fail

Ensuring that your program manages against these is critical

1. Inadequately trained and/or inexperienced project managers
2. Failure to set and manage expectations
3. Poor leadership at one or more levels of the organization
4. Failure to adequately identify, document & track requirements
5. Misalignment between the project team and the business
6. Cultural and organizational misalignment
7. Poor plans and planning processes
8. Inadequate or misused methods
9. Inadequate communication
10. Poor effort estimation



Solving the Top 10 Reasons Projects Fail

Most can be eliminated by following these good project mgt. practices (1 of 2)

- Base PLM on business needs
 - Support the whole business
- Educate (as well as train)
- Obtain committed leadership—*lack of management involvement is the main reason PLM projects fail*
 - Organize the program with a Steering Committee
- Harness project management skills
 - Apply discipline through a proven methodology
- Spend time planning, then executing each phase
 - Set up the program team activities to address known problem areas PLM can support and help



Solving the Top 10 Reasons Projects Fail

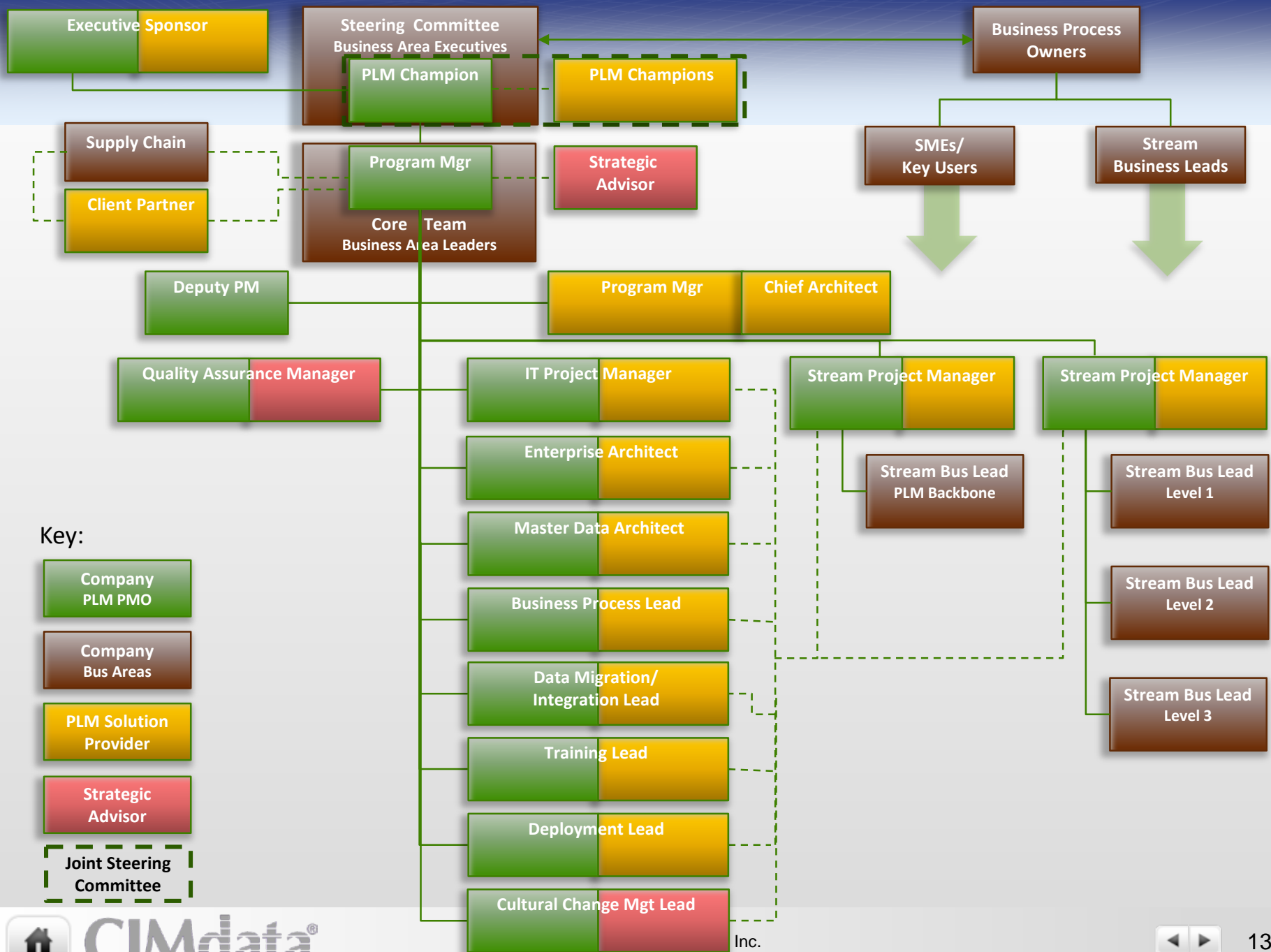
Most can be eliminated by following these good project mgt. practices (2 of 2)

- Make Communication a top priority in all areas of the program
 - Use cultural change management to create adoption and advocates
- Manage expectations
 - Document and prioritize requirements for each phase of your program
 - Assure change control is in place—change will happen
- Assess the implementation
 - Establish and measure metrics
 - Manage quality
- Commit to a sustainable program
 - Organize your on-going support and operations teams
 - Move quickly from production pilot to production

Critical PLM Program Structures

Main aspects of CIMdata's PLM governance related best practices

- PLM Center of Excellence (CoE)
 - A business-oriented group comprised of business as well as IT support individuals
 - The program management office and steering committee are the main groups within the center
- PLM Program Decision Authority
 - A PLM Steering Committee and Core Team would be responsible for providing advice to and seeking consent from the decision authority structure
- PLM Organizational Change
 - A network model for communication and education
 - Constructed to manage and foster adoption throughout the organization
 - Enables a sequence of persuasion for adoption of PLM solution



PLM Platforms

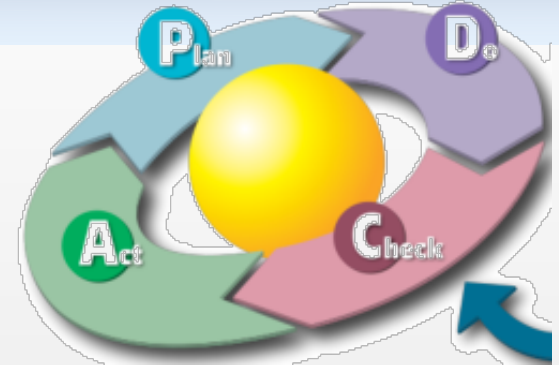
Emerging to provide extensible, cross-domain capabilities

- Monolithic enterprise information technology applications are no longer sustainable and robust enough to enable PLM
 - The complexity of extended enterprise processes, organizational requirements, and information constructs cannot be addressed by any single solution or solution provider
- Platforms are the foundation upon which functional capabilities, data, and processes are enabled
- Platforms supports integrated solutions from multiple providers deployed on an architecture that withstands change
- They provide extended enterprise enablement

Implementation Best Practices

Guidelines (1 of 2)

- Plan ahead—create a roadmap
 - Do the implementation in phases, not ad-hoc
- Customize *ONLY* when supporting a documented business need
 - Develop a strategy that takes into account benefits verses total cost of ownership
- Use business processes to drive priorities for specific integrations
 - Use 80-20 rule when defining what is really required
 - Ensure integrations are transparent to users
- Establish the standards you are going to use and then use them consistently



Implementation Best Practices

Guidelines (2 of 2)

- Leverage commercial services providers—don't do it all yourself—implementing PLM is *not* your business
- Establish *reasonable & appropriate* security mechanisms when communicating across enterprise boundaries
- Clean and migrate data before users need it
 - Data migration is mostly underestimated
- Educate about PLM's capabilities and benefits—how and why it is good for the business
- Train, train, re-train



PLM & Business

Best practices to support business success

- Implement PLM across the enterprise—not in departments
- Support whole product lifecycles well beyond product design (packaging, labeling, installation, MRO, redesign...)



PLM & Business

Best practices to support business success

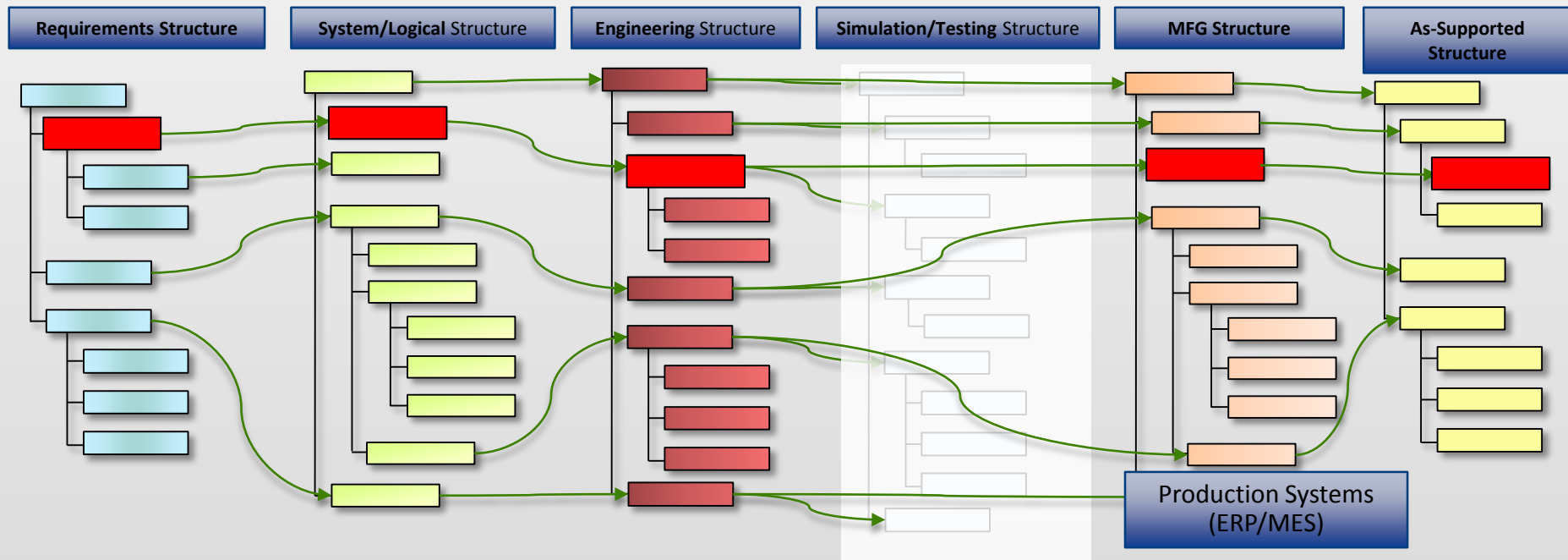
- Use PLM as an innovation engine, providing use and reuse of the organization's intellectual assets
- Manage data intensive processes—manage all processes
 - It is not just a data manager



PLM Provides a Single Source of Truth: E-to-E

A single source for multiple structures (e.g., multiple BOMs)—enabling the Digital Thread

- Flexibly manage product configurations that have become critical to today's demand for massive customization



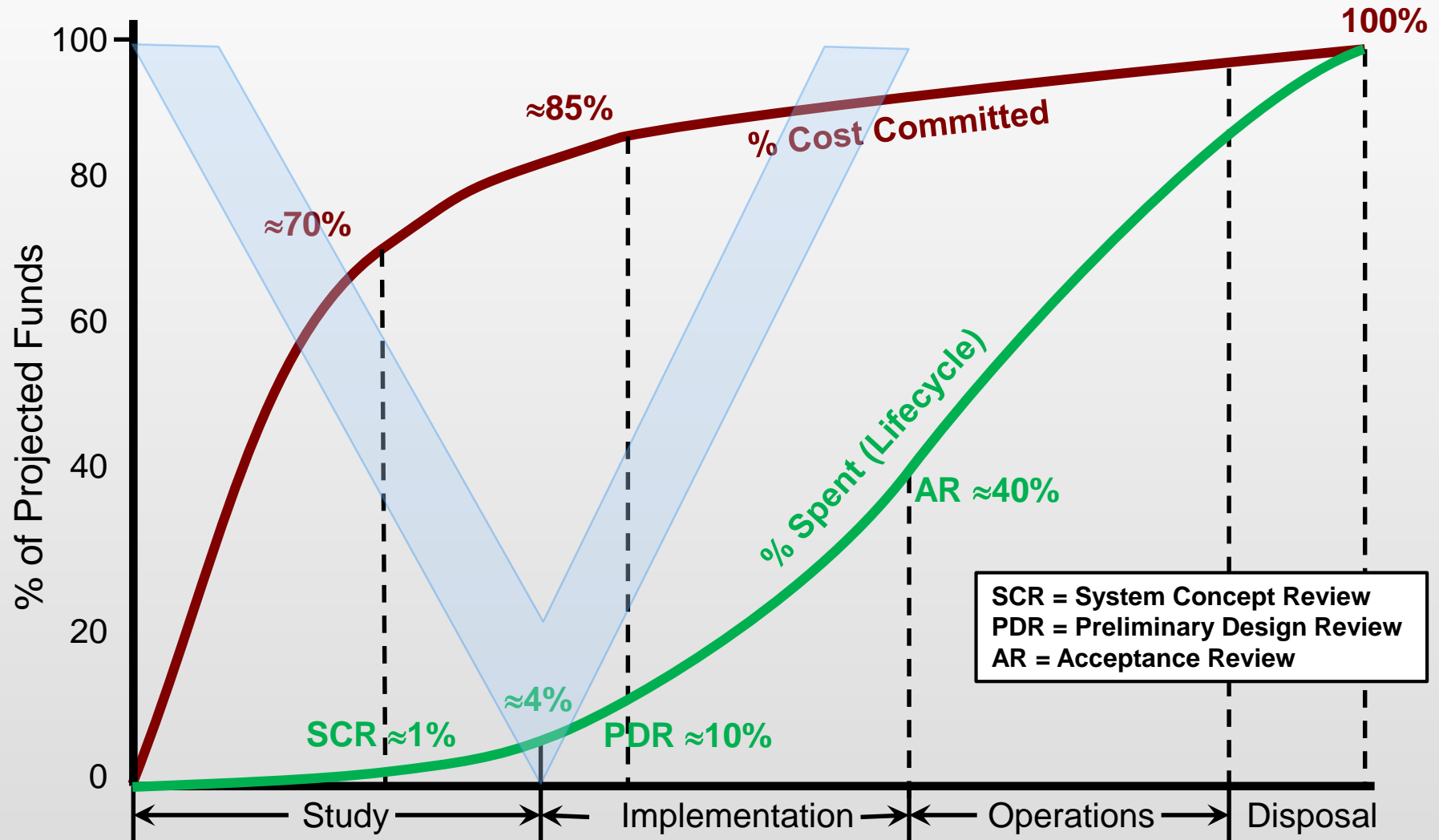
PLM Empowers Businesses

Enabling product innovation and enhancing performance

- Provides an integrated collaborative environment for the entire product lifecycle
- Increases company flexibility and agility to respond swiftly to the market
 - Enables more innovation of all types
 - Improves costs, quality, time to market, & ROI
 - Improves relationships with customers, suppliers, partners
- Utilizes valid technology, methods, and processes
 - Adapts to today's rapidly changing business environments
 - Impacts the company's bottom line

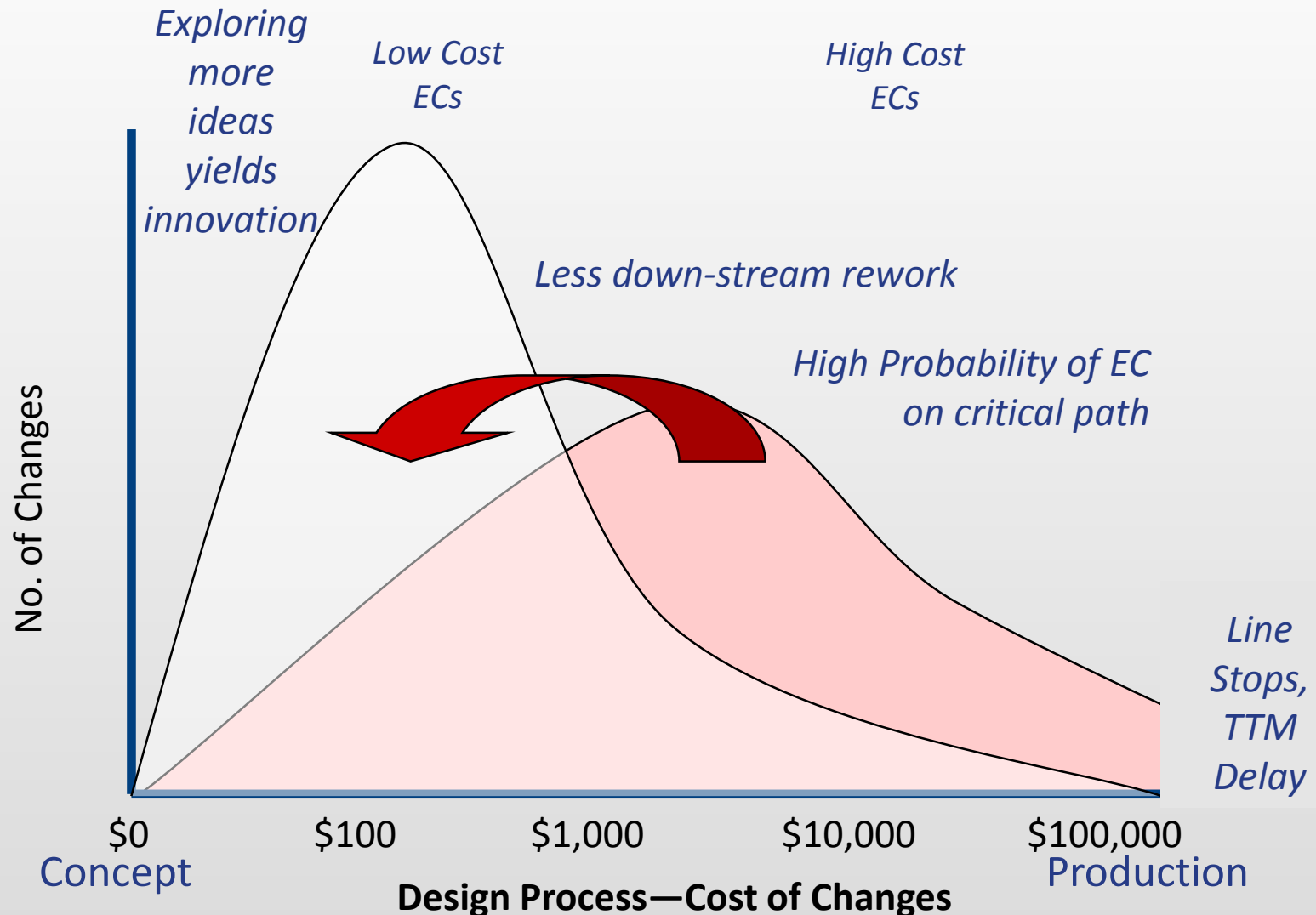
Expenditure vs. Committed Cost Profile

Lifecycle cost is determined by early decisions



Benefits for Business Process

Enable product reviews—resolve problems earlier



Enable Generation Z

The soft rumble that is reverberating throughout the corporate world

- The social-savvy workforce is here, but the corporate world is still struggling to enable workers who expect:
 - *Instant download* of applications and data with little or no training necessary
 - *Everything to be accessible* via the Internet and over their mobile devices
 - To be *always connected* and most communication is done in short bursts
 - To *collaboratively innovate*—a high level and rich form of interaction
 - To be part of *participatory decision making processes*
 - Execute *global business processes*, gain rapid feedback, use *multi-channel and multi-media communications*
 - To *work within groups* & not by themselves with *distribute leadership support*
 - To multi-task, *always doing more than one thing at a time*

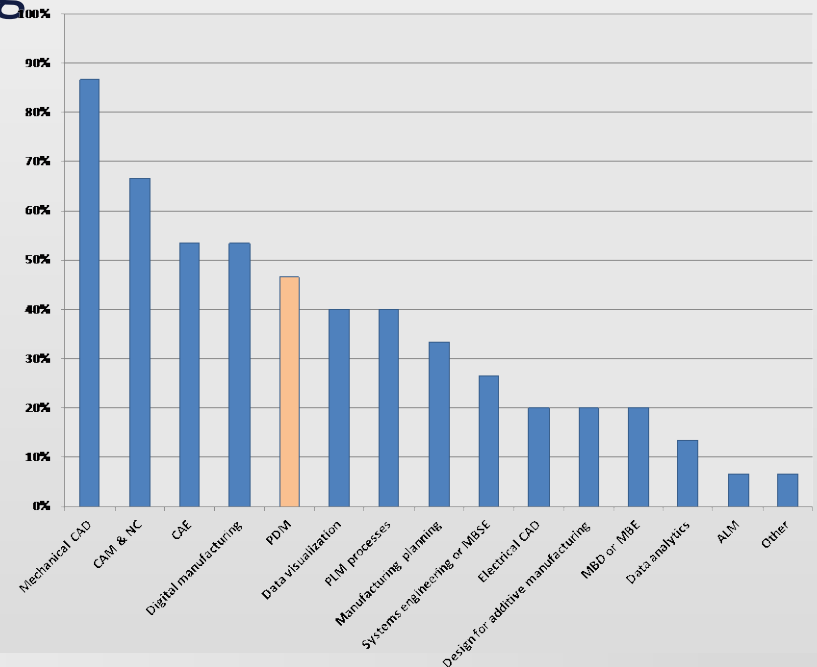
*How do you support this if you do not have PLM?
You don't!*



PLM In the Academy

Results from recent CIMdata research

- Use PLM in coursework, not only for contests
- As it is for businesses—PLM needs to be thought of as cross-disciplinary—it is not only a new way of drafting
- Embrace the breadth of PLM from CAD to PDM to process mgmt. to additive manufacturing
- Use & teach PLM processes, not just the technical tools such as CAD
- Prepare tomorrow's leaders to embrace PLM as a business facilitator—Industry 4.0...



Concluding Remarks

PLM best practices

- Focus on the impact to the business
- Ensure that business processes are supported
- Use a governance structure—assure management remains involved
- Use proven project management strategies
- Clearly articulate plans and requirements at all stages
- Assess if the expected returns from PLM are viable
- Scope the PLM initiative at each stage of its evolution
- Communicate the objectives and progress of the PLM project



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