

Jan Larsson; Siemens PLM Software

PLM for the Midmarket

Making Successful Products Has Never Been More Complex...

**Intelligent
Products**

**Exploding
Digital Data**

**Global
Expansion**

**Less Margin
for Error**



The New Realities of Manufacturing

**MORE PEOPLE
COLLABORATING...**

**SEARCHING FOR
MORE INFORMATION...**

**MAKING COMPLEX
PRODUCT DECISIONS...**

**UNDER PRESSURE WITH
LESS ROOM FOR ERROR.**



The Job of PLM Isn't Done



PLM Helps to Conquer Complexity

**MORE PEOPLE
INTRINSICALLY AWARE...**

**RECEIVING THE
RIGHT INFORMATION...**

**MAKING INTEGRATED
SYSTEMS DECISIONS...**

**ON TIME WITH PURE WITH
GREATER ACCURACY.**



Anyone Can Make the Decision that Makes the Difference in Your Product



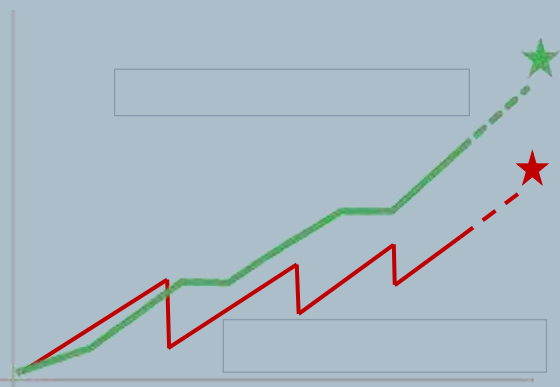
All the Small Decisions that Lead to Your Milestone Decisions Must be Right



Future-proof Architecture

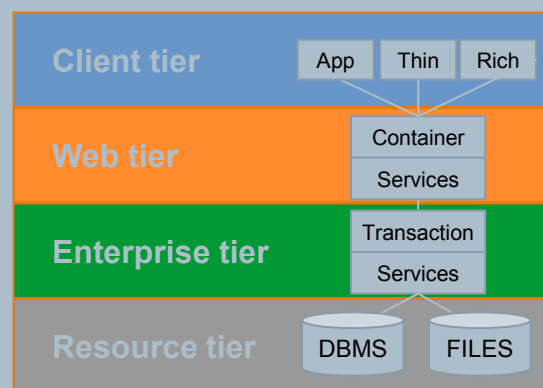
Open

- Seamless continuous upgrade approach: enhance the system but don't leave data behind
- Standards based support for enterprise ecosystem



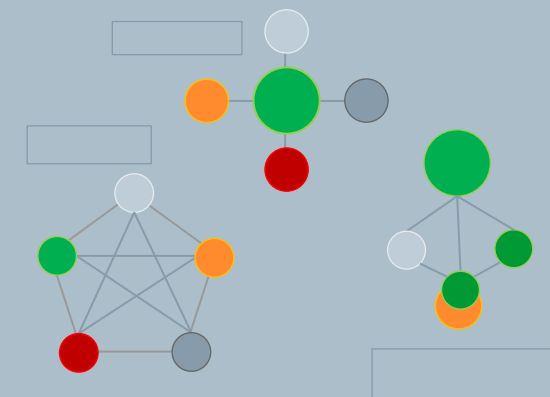
Scalable

- Transparent adjustment to needs based on demand
- Four-tier architecture: add new technologies as available



Flexible

- Configurable model to support unique business strategies
- Data model extensibility through BMIDE: define behavior without coding



Small Medium Enterprises (SMEs) in EMEA

.... of the 26 million businesses in the European Union (EU) about 2.5 million (10%) are manufacturing based; over 99% are SMEs.

EU manufacturing business employs over 36 million people and contributes approximately 22% to total EU GDP

Manufacture – A Vision for 2020



SMEs cover the complete Manufacturing Spectrum

Manufacturing	No of SMEs	Sectors	Countries with highest number of SMEs as %
High tech	45,871	Pharmaceuticals, Computers, Electronics	Germany:17, UK: 15, Italy:14, CR:8, France:8
Medium-high-tech	192,980	Chemicals, Machinery, Motor Vehicles	Italy:19, Germany:14, CR:13, UK:9, Spain:8
Medium-low-tech	691,096	Rubber & plastic, Metal Products	Italy:21, Germany:11, Spain:10, France:9, CR:9
Low-tech	1,060,868	Food, Beverages, Tobacco, Textiles	Italy:21, France:12, Spain:10, Germany:8, Poland:8

Source: 2011 Estimates - www.ec.europa.eu

SME vs. Enterprise Characteristics

SME	Enterprise
Limited resources	Specialists and departments
Short-term and re-active approach	Stand back and take the longer view
Limited documented processes	Well defined and documented processes
Informal management systems	Formal management systems
Limited by scale	Benefits from scale
Mainly privately/family owned	Mainly corporate or public ownership
Command and Control culture	People empowered within defined scope
OOTB solutions	Configurable Solutions

Globalisation and Competition

Total Cost of Ownership

Compliance and Regulatory

Adapted from FutureSME

PLM - Product Lifecycle Management

PLM supports process standardization according to lean principles across the critical product lifecycle workstreams from Engineering and Product Development thru Manufacturing and Supply Chain while specifically enabling:

- **Collaborative** creation, management, dissemination, and use of product definition information globally
- **Optimized** key process flows according to lean principles across the extended enterprise (customers, joint ventures, supply partners, ...)
- **Integrated** people, processes, business systems, and information
- **Scalability** to span the entire lifecycle from concept to end of life of a product



PLM Value to the Business

PLM helps companies deliver faster with improved quality bringing more business at a reduced cost.

Time = move faster

Cost = control expense

Quality = better result

Revenue = grow sales



- Reduce cost of space access by 10x
- 50% productivity improvement



- Reduce rework by 80%
- 90% fewer deviations in project and technical documentation



- Faster quotes and more accurate cost estimates
- Plant design costs reduced by 2/3



- Find information immediately on-line
- Better informed engineering decisions



- 50% reduction in development cycle times
- 20% cycle time savings thanks to cPDM



- Tasks completed in 2-3 days vs. 2-3 weeks
- Faster cycle times helps win new business

PLM Value to the Business

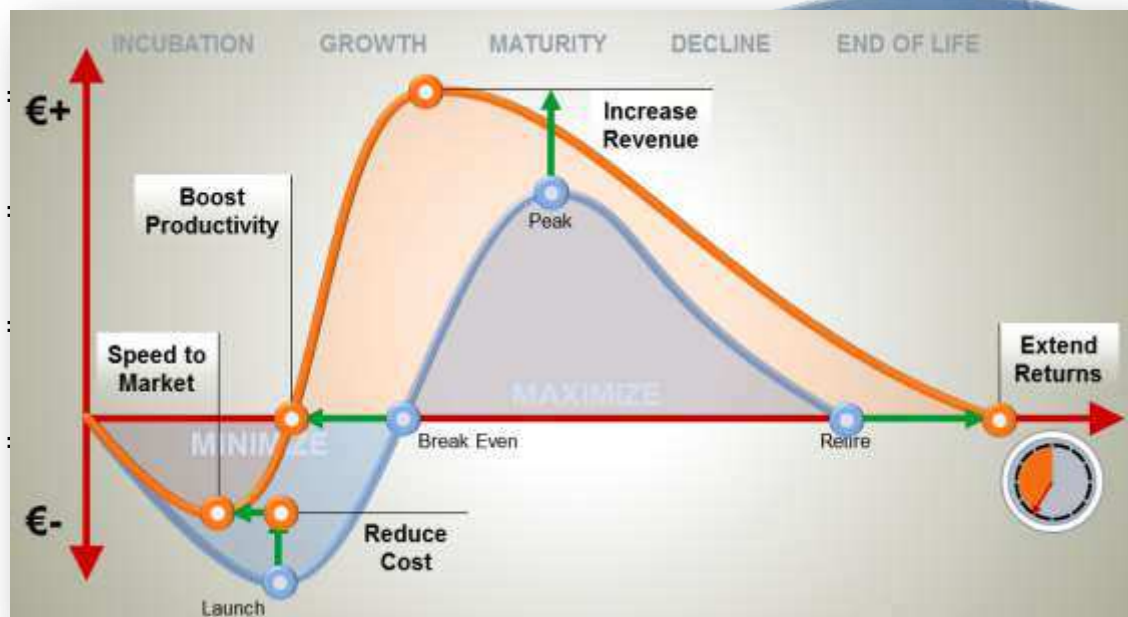
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PLM is a Strategic Business System



Confidence in Information and Processes

Find it fast

...a single source of data

Trust it

...revision and security control

Comprehend it

...intuitive 2D/3D visualization

Understand context

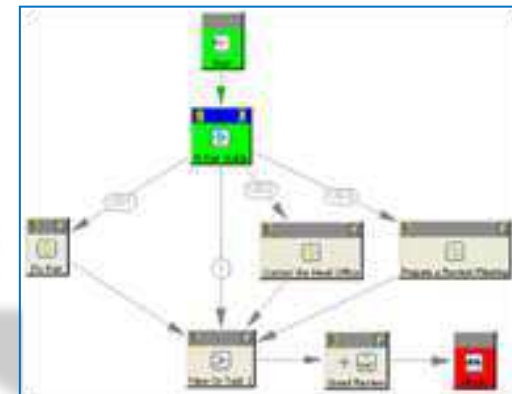
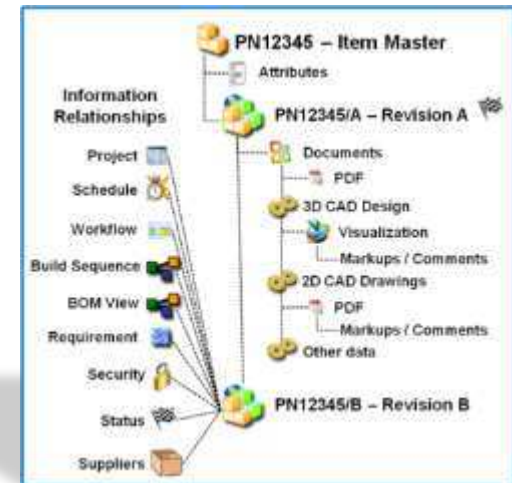
...rich information relationships

Know when & what to do

...schedule and workflow automation

Make it visible to others

...automatic notification and reporting



Core concepts for PLM

Manage Information

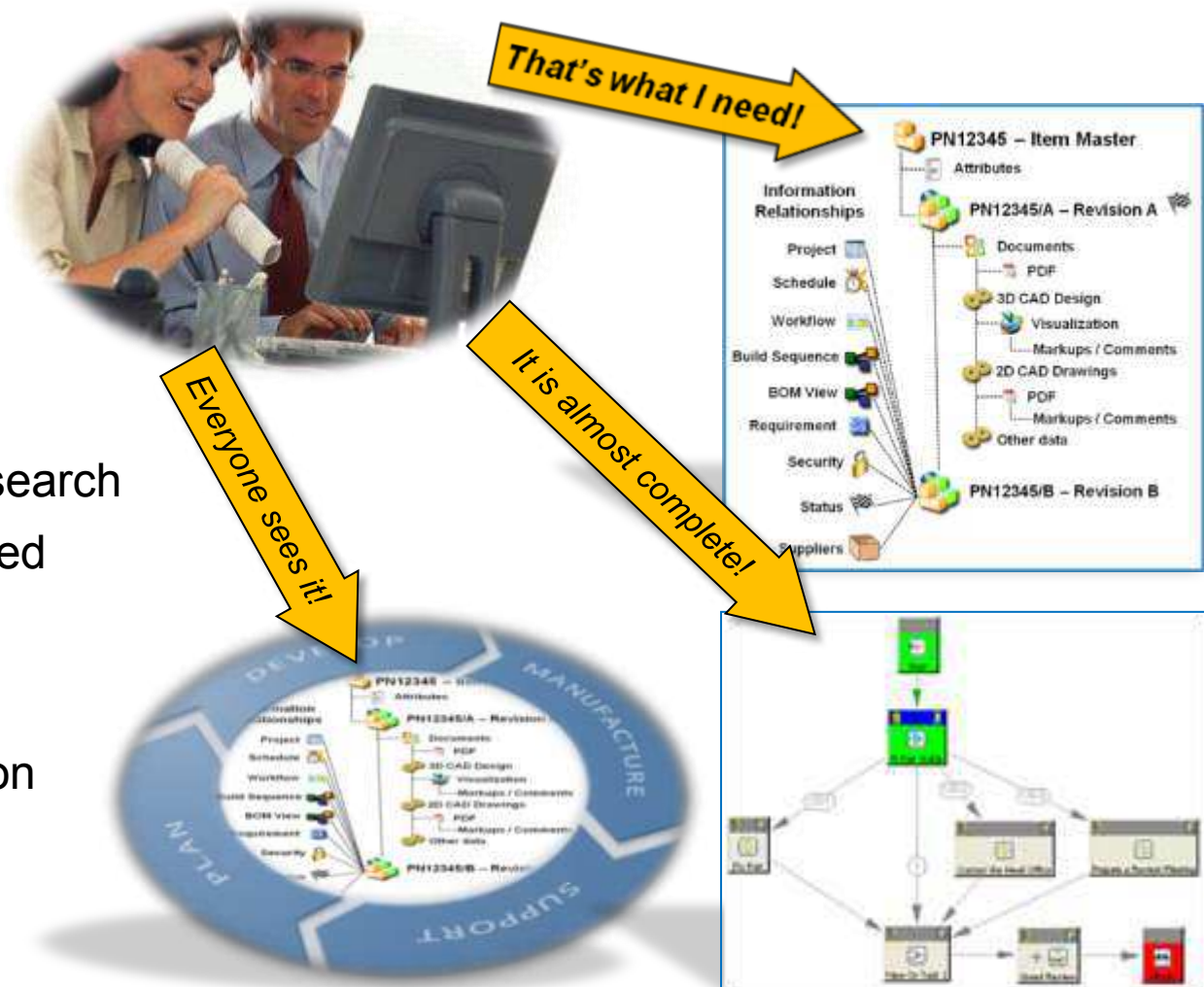
- Manage the data
- Manage the process
- Single Virtual Source

Find Information

- Simple and detailed search
- Where used/referenced
- Process status

Share Information

- Real-time collaboration
- Attached to workflow
- Visualization



A PLM Platform ties applications together

Combine information, process and communication to capture how your business really works providing...

Comprehensive

...more from a single solution partner

Modular

...align investment with requirements over time

Out-of-the-box

...use best practices -vs- build from scratch

Configurable

...faster deployment lowers TCO

Scalable

...high performance for any number of users

OPEN

...industry standard technologies

PLM Platform



Single Source of Information



Process Automation



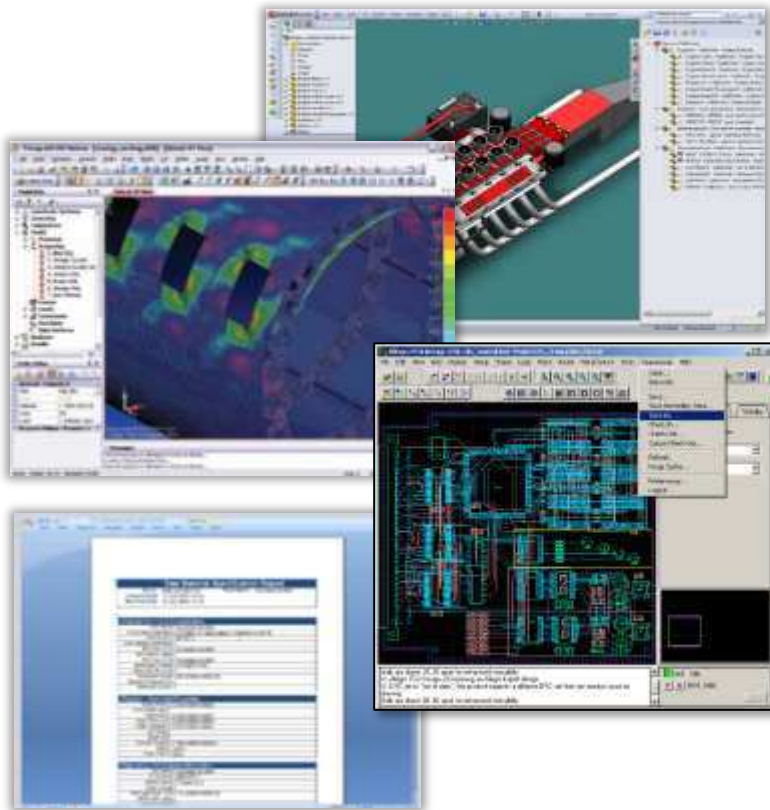
Embedded Collaboration



Applications

PLM provides a single source of the truth

If it's available in electronic form, PLM can manage it.



MultiCAD in a Single Source:

NX, Solid Edge, SolidWorks, Pro/E, ,
AutoCAD, Inventor, CAM Data

ECAD Integrations: Altium, Cadence,
Mentor, Intercept, EDA Gateway

SLM Integrations: NXNastran, Abaqus,
Ansys, Fluent, Hypermesh, SLM Toolkit

Basic Data Types: Word, Excel, Text,
PDF, ZIP, HTML, etc...

Configurable Datasets to map any
application for Teamcenter to manage the
information.

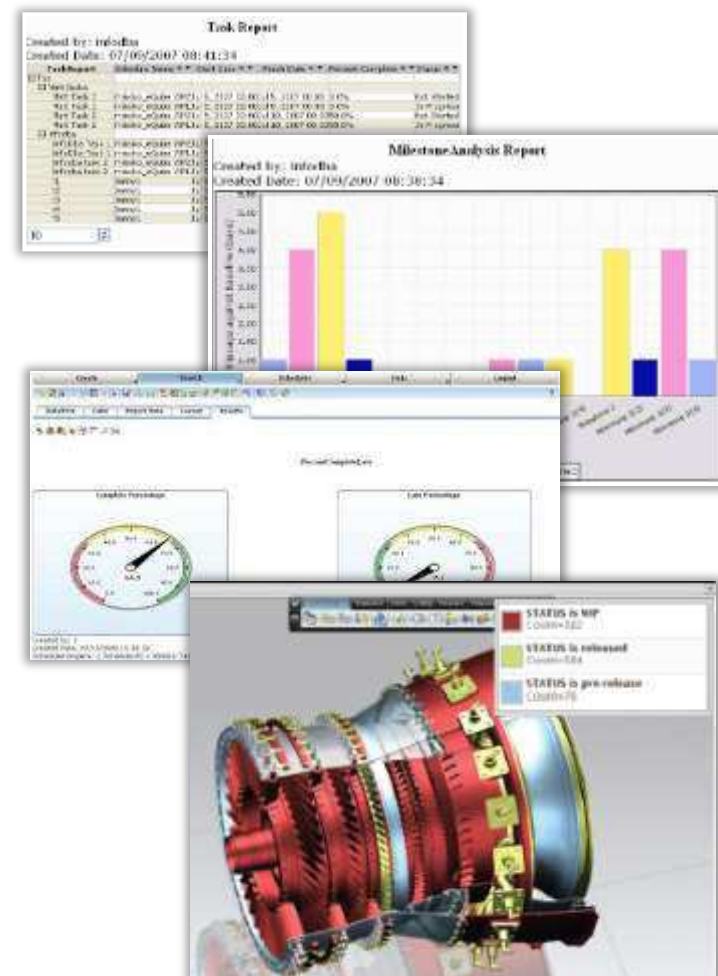
Company / Enterprise wide Progress Visibility

Macro and Micro visibility of status

Where in the Product Lifecycle?

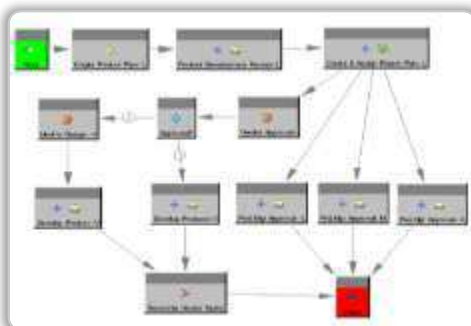


- Release Status
- Product Dev. Phases
- Change Process



Where in a Process Workflow?

- Completion status
- Who's task is due
- Where is it going

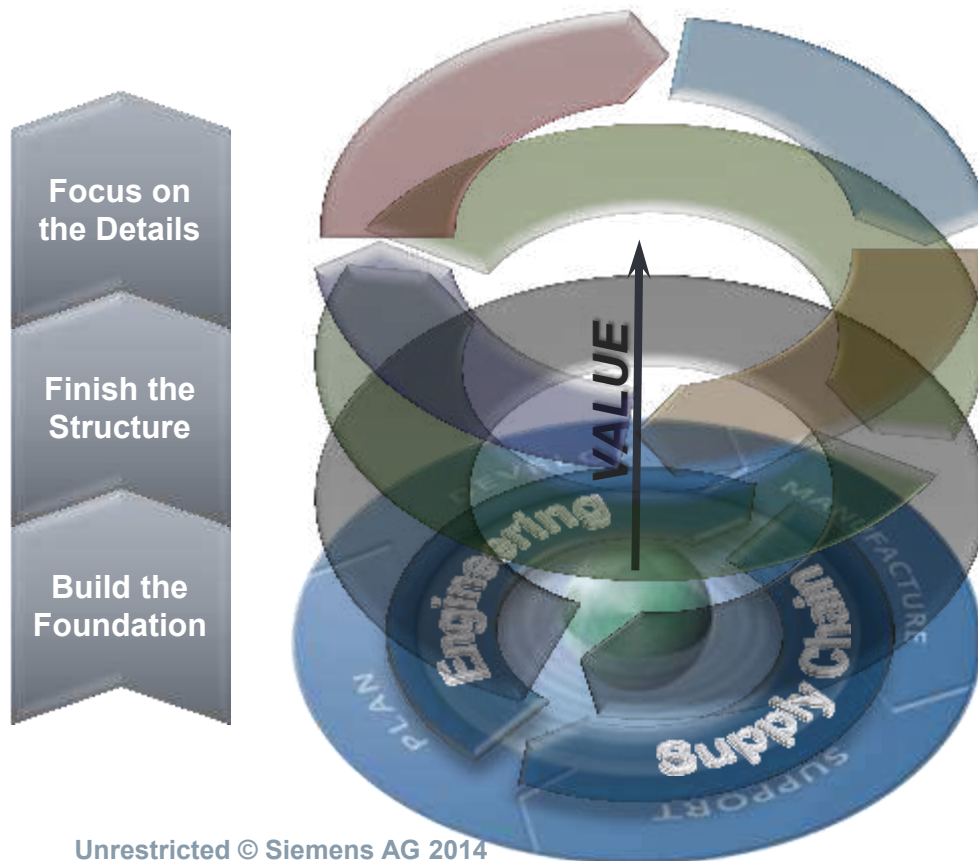


Global / Local Collaboration from Anywhere



Phased approach to PLM Initiatives

Adopting End-to-End PLM takes time so a phased strategy is best practice of building a solid foundation in Engineering, expanding the flow of information to Manufacturing, and integrating strategic Business operations.



Optimize the Business

Specialized PLM solutions (applications) that provide specific capabilities as needed for different operations thru the product lifecycle.

Product Information & Processes

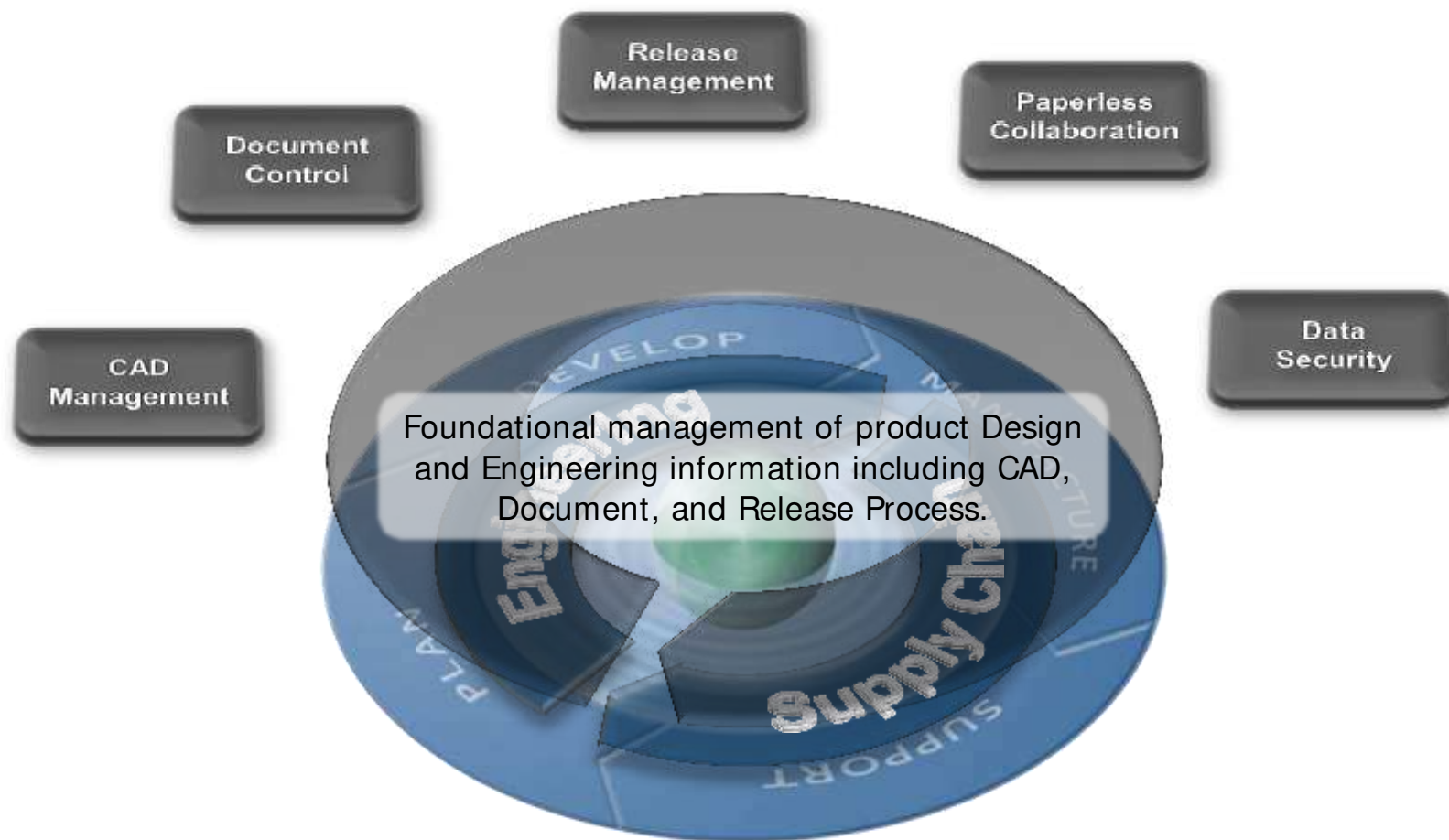
Expand to the management of any information and processes that *supports* the development, production, and documentation of product.

PLM Foundation (PDM)

Foundational management of product Design and Engineering information including CAD, Document, and Release Status.

Foundational PLM

(*Product Data Management*)

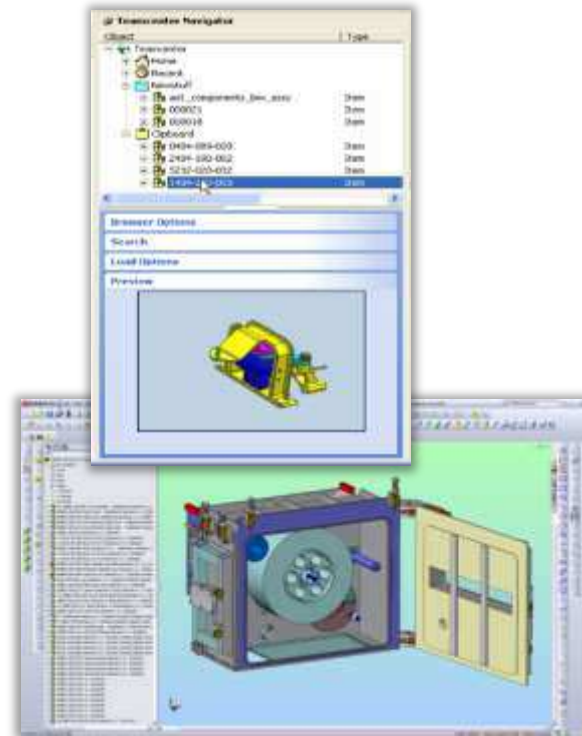


Foundational PLM

(*Product Data Management*)

CAD Management

- Full Check IN / Check Out control
- Automatic Versions/Revisions
- Full Support of CAD modeling features
- Product Structure Synchronization
- PLM access without leaving CAD
- Advanced Search exposed in CAD
- Automatic auxiliary file generation
- Bi-Directional Attribute Synchronization



Foundational PLM

(*Product Data Management*)

CAD Management

Release Management

- Managed data ensures processing the right data
- An electronic process means a repeatable process
- Different Statuses can be applied throughout the lifecycle to denote which process steps are complete as well as control access to the data

Release to Development



Release to Prototype



Release to Production



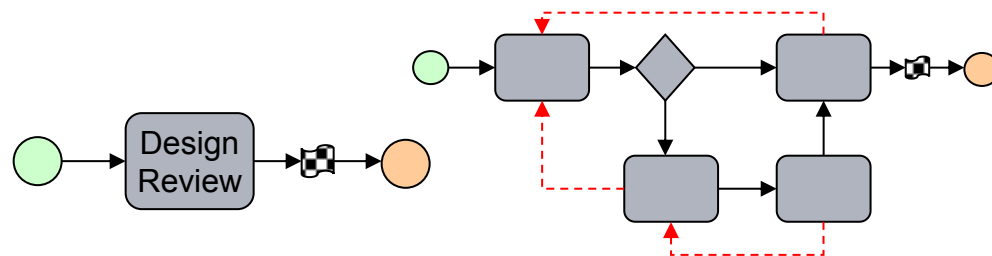
Release to Service Only



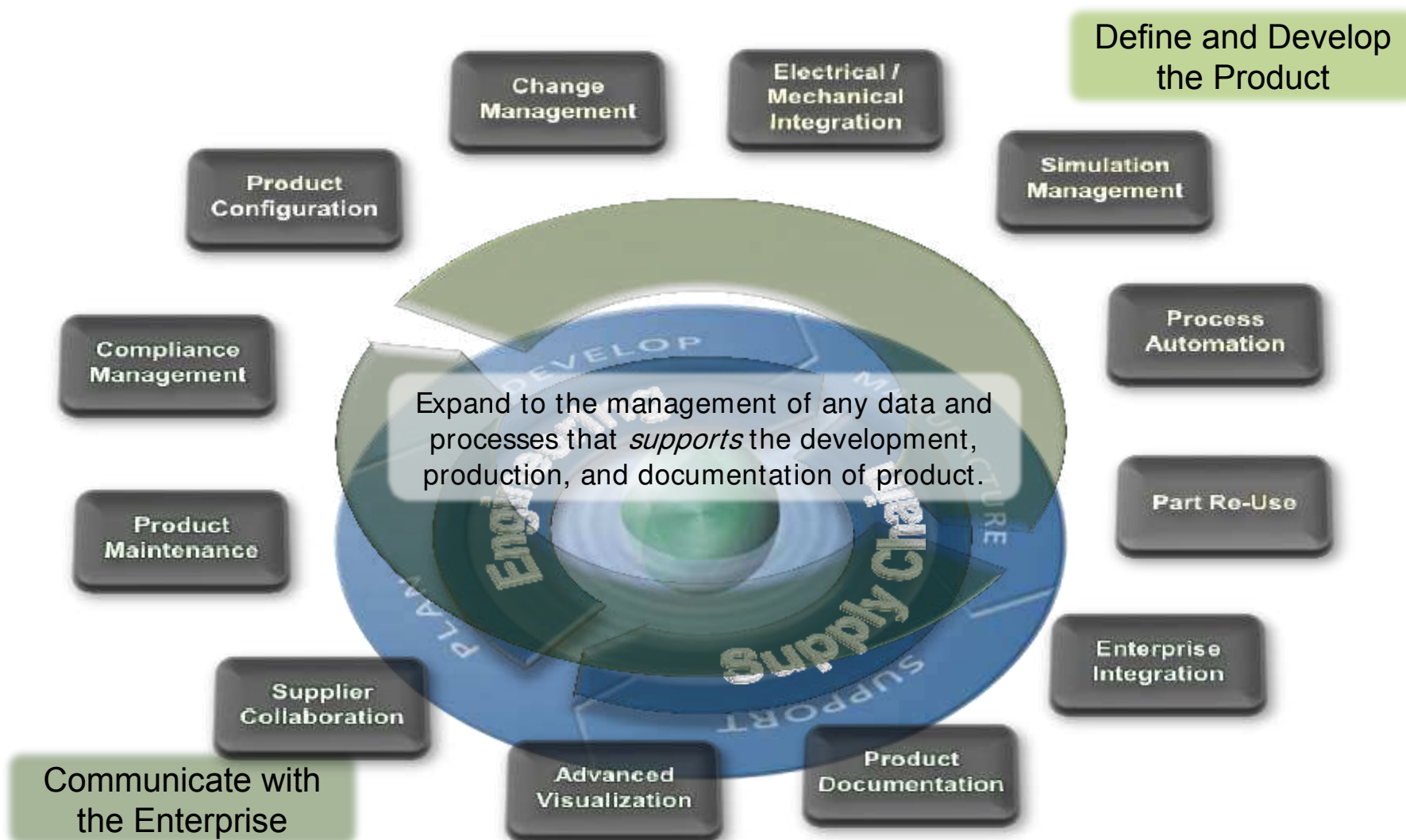
Release to Obsolete



Closed



Product Information & Processes



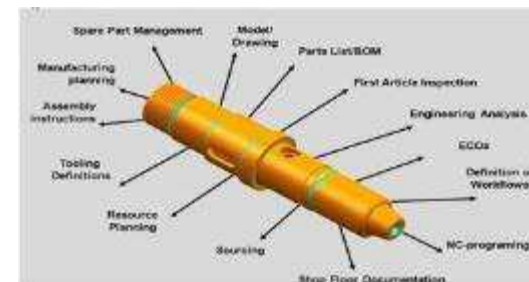
Product Information & Processes

Define and Develop Product

Part Reuse

Enable companies to achieve the highest reuse cost-savings through the promotion of reuse and prevention of duplication

- **Organize** existing parts to support reuse processes
- **Search** for reusable parts by attribute or by shape
- Automation tools **extend** and **refine** part reuse
- **Access** reusable parts within the CAD environment



Communicate with the Enterprise

Advanced Visualization

Product Documentation

Product Information & Processes

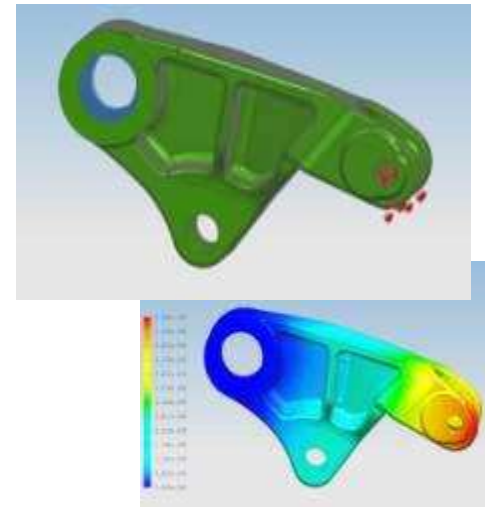
Define and Develop
Product

Part Reuse

Simulation Management

A Single Source for Simulation Information and Processes

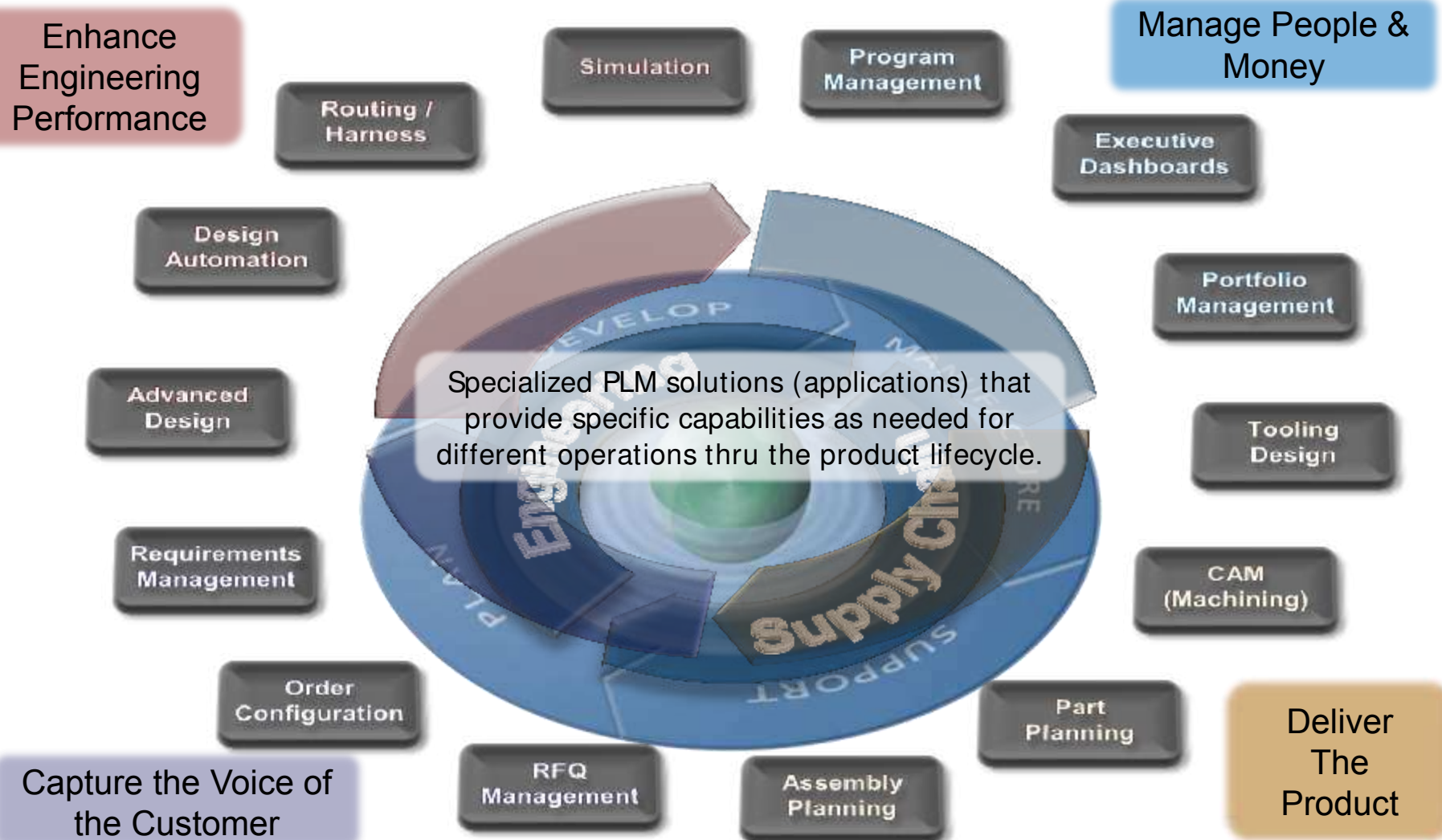
- Manages CAE specific data
- Synchronizes CAE with CAD data
- Facilitates reuse of existing designs and engineering knowledge
- Integrates existing CAE applications
- A single environment for requirements, project, workflow, and reporting.
- Interactive visualization of model and results with JT



Communi-
the Enterprise

Visualization

Optimize the Business



Optimize the Business

Enhance
Engineering
Performance

Simulation

Program

Manage People &
Money

Order Configuration

ETO addresses the challenge with a comprehensive solution spanning sales, engineering and manufacturing. By capturing process knowledge and using it to automate key business processes across the enterprise.

Sales quotation benefits

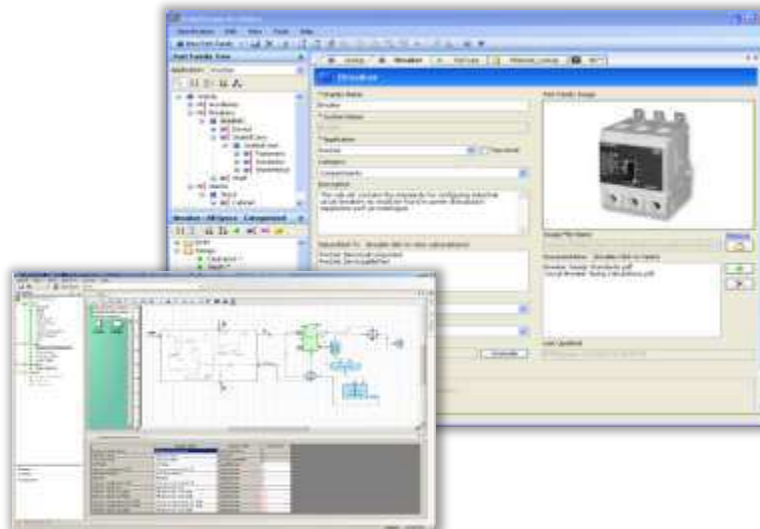
- Increased bid rate
- Increased win rate
- Margin security

Order engineering benefits

- Shorter lead times
- Increased productivity
- Fewer errors

Order manufacturing benefits

- Fewer work stoppages
- Greater asset utilization
- More throughput



Capture the Voice of
the Customer

RFQ
Management

Assembly
Planning

Deliver
The
Product

Optimize the Business

Enhance
Engineering
Performance

Simulation

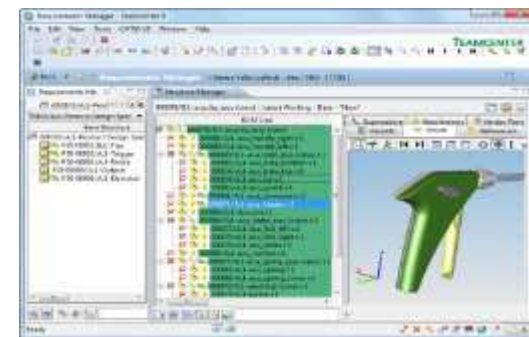
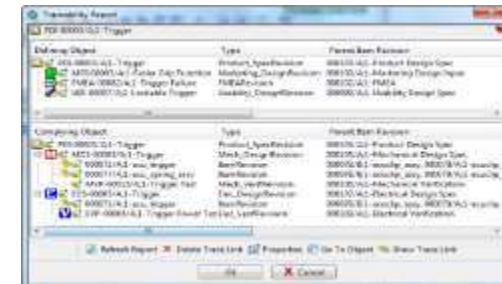
Program

Manage People &
Money

Order Configuration

Requirements Management

- Manage all product requirements in a single location
- Develop and manage “Bills of Requirements” to capture government, customer, and supplier specifications
- Link requirements directly to product data to provide visibility to designers and engineers
- Have confidence that all product requirements are met thru traceability and orphan reports
- Reuse existing requirements



Capture the
the Customer

Deliver
The
Product

Components for a successful implementation



Align People, Process and Technology to ensure good communication and integration of business needs with PLM best practices.

Establish partnership relationships with defined roles and responsibilities to manage the PLM implementation.

	Customer	Siemens
Executive Sponsorship	First, Last	First, Last
Strategy Steering Committee	First, Last	First, Last
PLM Project Management	First, Last	First, Last
Supporting Resource Leads	First, Last	First, Last



Develop a well defined project plan with target milestones so that everyone is working to the same objectives.

SIEMENS



PLM
Connection
Nordic
May 20, 2014

Jan Larsson; Siemens PLM Software

Thank You