PTC Technology Roadmap

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Agenda

- **Product News**
  - Windchill 10.0
  - Creo 2.0
  - Integrity

- **Solution News**
  - Solutions for the Enterprise
  - Solutions for Engineering
  - Solutions for the Supply Chain & Manufacturing
  - Solutions for Service

- **Summary**
Product News
Windchill

DO MORE throughout the product lifecycle

KNOW MORE about your product’s performance

GET MORE value from your PLM system
DO MORE:

- Breadth with improved BOM management
- Depth through unified ECAD/MCAD/Software
- Improved business processes
GET MORE: Easy to Learn and Use

- Friendly, more intuitive interface
- No more hunting for commands
- Accelerated data interaction
GET MORE:  *Turn on 10….anywhere with Windchill mobile*

- Explore product structures
- Interrogate 3D models
- View and complete tasks
GET MORE:
Lower TCO and IT-Friendly System Administration

- Simplified installation
- Streamlined upgrade process
- Improved monitoring tools
Windchill 10.0

**TURN ON**

**DO MORE**
throughout the product lifecycle

**KNOW MORE**
about your product’s performance

**GET MORE**
value from your PLM system
The Creo Strategy addresses the remaining, big issues with CAD

1. Ease of Use
2. Interoperability
3. Technology Lock-In
4. Realistic Assembly Modeling
- Built upon the elements of CoCreate, ProductView and Pro/ENGINEER

- A scalable suite, of interoperable, right-sized, integrated applications, spanning the entire spectrum of product development

- Delivers unprecedented interoperability across apps

- Provides a common user experience across apps

- Protects existing investment in data and working methods
Creo 2.0

Winner of the 2011 Product of the Year

Winner of the 2011 Leadership in Engineering Program  
*Category: Software*

Top Design Hardware & Software Trends of 2011

“PTC…challenged the whole notion of the monolithic CAD application.”
Software Has Become a Key Part of the Whole Product

Integrity
The volume and complexity of software in products is growing at a staggering rate, yet the management of hardware and software development processes remains largely disconnected.

<table>
<thead>
<tr>
<th>Automotive</th>
<th>Industrial Equipment</th>
<th>Aerospace and Defense</th>
<th>Medical Devices</th>
<th>Electronics and High Tech</th>
</tr>
</thead>
<tbody>
<tr>
<td>100,000,000 software lines of code (SLOC) in modern vehicles</td>
<td>Up to 90% of change is driven from software</td>
<td>500% increase in SLOC in aerospace in 10 years</td>
<td>More than 70% of product innovation in medical devices is software driven</td>
<td>5:1 ratio of software engineers to hardware engineers</td>
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Integral Requirements Management Solution

**Integrity**

*Requirement management and authoring*

- Analyze need
- Define specification breakdown
- Estimate and prioritize
- Establish traceability (e.g., tasks, test documents)
- Establish traceability to product data
- Report and monitor traceability

**Windchill**

*Downstream traceability to product information*

- Analyze need
- Define specification breakdown
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Product News

Windchill  creo

Integrity
Solutions for the Enterprise

Enterprise

Engineering

Manufacturing & Supply Chain

Service
What Matters Most to Enterprise Customers

Single Source of Truth
Closed-loop Quality Processes
Social Product Development

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From Chaos

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To Completeness Across the Organization

Single Source of Truth

- Tech Illustration
- Routed Systems
- 2D CAD
- CAE
- CAM
- Cost & Product Analytics
- Project Collaboration
- Strategic Sourcing
- Globalization
- Visualization, Mockup, & Markup
- EDA/PCB
- Simulation & Analysis
- EDA/IC
- Software Modeling
- System Eng.
- Software CM (SCCM)
- Enterprise PDM (Product & Process Mgmt.)
- IC Mgmt.
- Enterprise PDM (Product & Process Mgmt.)
- MCAD Mgmt.
- XML Mgmt.
- Doc Mgmt.
- Manufacturing Process Mgmt.
- Service Program Mgmt.
- As-Maintained Equipment Mgmt.
- Structure and Architecture Mgmt.
Maintain the Single Source of Truth
Change Management
Single Source of Truth Enables Reports

Visual Reporting
Environmental Performance
Program Visibility
Cost Analytics
What Matters Most to Enterprise Customers

Single Source of Truth

Closed-loop Quality Processes

Social Product Development
Quality is More Important Than Ever

Ripped from the headlines

- 809,000 Car Seats Recalled: Dorel Child Restraints Marketed as Cosco, First and Other Brands
- Johnson & Johnson Reputation Tarnished by Recalls
- 500,000 bassinets recalled following several reports of collapses

Lesley Weeks knows first-hand what can happen when a bassinet malfunctions. She was the one when it actually fell through.
Quality Management

It's Not a One Department Job

Plan
Identify critical-to-quality requirements

Innovate
Improve next-generation products and systems

Design
Evaluate system reliability and risk

Service
Manage repair, maintenance, and corrective actions

Test
Link test plan/results to product requirements and design

Manufacture
Implement and monitor quality controls

Quality Lifecycle Management
Single Source of Truth
Closed-loop Quality Processes
Social Product Development

What Matters Most to Enterprise Customers

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Windchill SocialLink is Now Available

Windchill SocialLink brings to life “Social Product Development” which is the fusion of Web 2.0 and Product Development.
Early System Design

Complete Product Definition
CUSTOMER REQUIREMENTS form the basis of Early System Design
Requirements

- VOC Data
- Attributes
- Specifications
System Models

Reliability Block Diagram

Model-Driven Development

Math-Based System Model

Simulation

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Early BOM

- Quickly create high level product structure
- Initial rules
- Design for modularity
- Platform approach
Conceptual Layouts

Conceptual 2D to 3D engineering
Embrace 2D for the right tasks
Drive 3D assembly models
Industrial Design

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Early System Design

Complete Product Definition
Multi-CAD Data Management

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A Broad Range of Analyses

Simulation

Environmental Compliance

Reliability

Interference

Carbon footprint

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Supplier Collaboration

Manufacturing Engineering
Supplier Collaboration

Parts and Partners

- Manage the AML/AVL
- Collect and manage supply chain data
- Drive standards adoption
Supplier Collaboration

Projects and Packages

- Controlled access visibility into your system
- Share content securely for external collaboration online or off-line

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Supplier Collaboration

Manufacturing Engineering
Manufacturing Engineering

Defining the Manufacturing Process

Assembly operations and sequences

NC operations and sequences

Process verification plan

Creating the shop floor documentation
Windchill Mobile

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Solutions for Service

Enterprise

Engineering

Manufacturing & Supply Chain

Service

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Service Parts Data Management

Service Information Delivery
Automating the Service BOM Process

![Diagram showing eBOM and sBOM with an illustrated parts list]

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Service Parts Data Management

Service Information Delivery
Modernizing Service Information Delivery
Modernizing Service Information Delivery

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Service Parts Data Management

Technical Publications

Information Delivery

Arbortext
Service Information Solutions
Solutions For You

Enterprise

Engineering

Manufacturing & Supply Chain

Service

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Thank You