



**2003**  
OSISOFT USERS CONFERENCE

# ***ProcessPoint***

*Leveraging Product Information  
for Agile Manufacturing*

# Agenda

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- *What is a PLM System?*
- *Creating Products with ProcessPoint*
- *ProcessPoint in an Enterprise*
- *ProcessPoint in Manufacturing*
- *Summary*



# ***Product Lifecycle Management***

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## **Definition**

- *The management of all phases of a product's lifecycle, from new idea through commercialization, manufacturing, maturation, commoditization and decline.*

## **Needs**

- *Comprehensive product information*
- *Store it forever*
- *Accessible to anyone, anywhere*
- *Available in a task specific manner*
- ***Address the needs of your entire company***





**Take Orders,  
Purchase Materials**

**Scheduling**

**Technology  
Transfer**

**Production  
Orders**

**Approval**



**Development**

**OSIsoft**

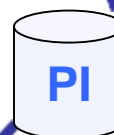
**ERP**

**PLM**

**MES**



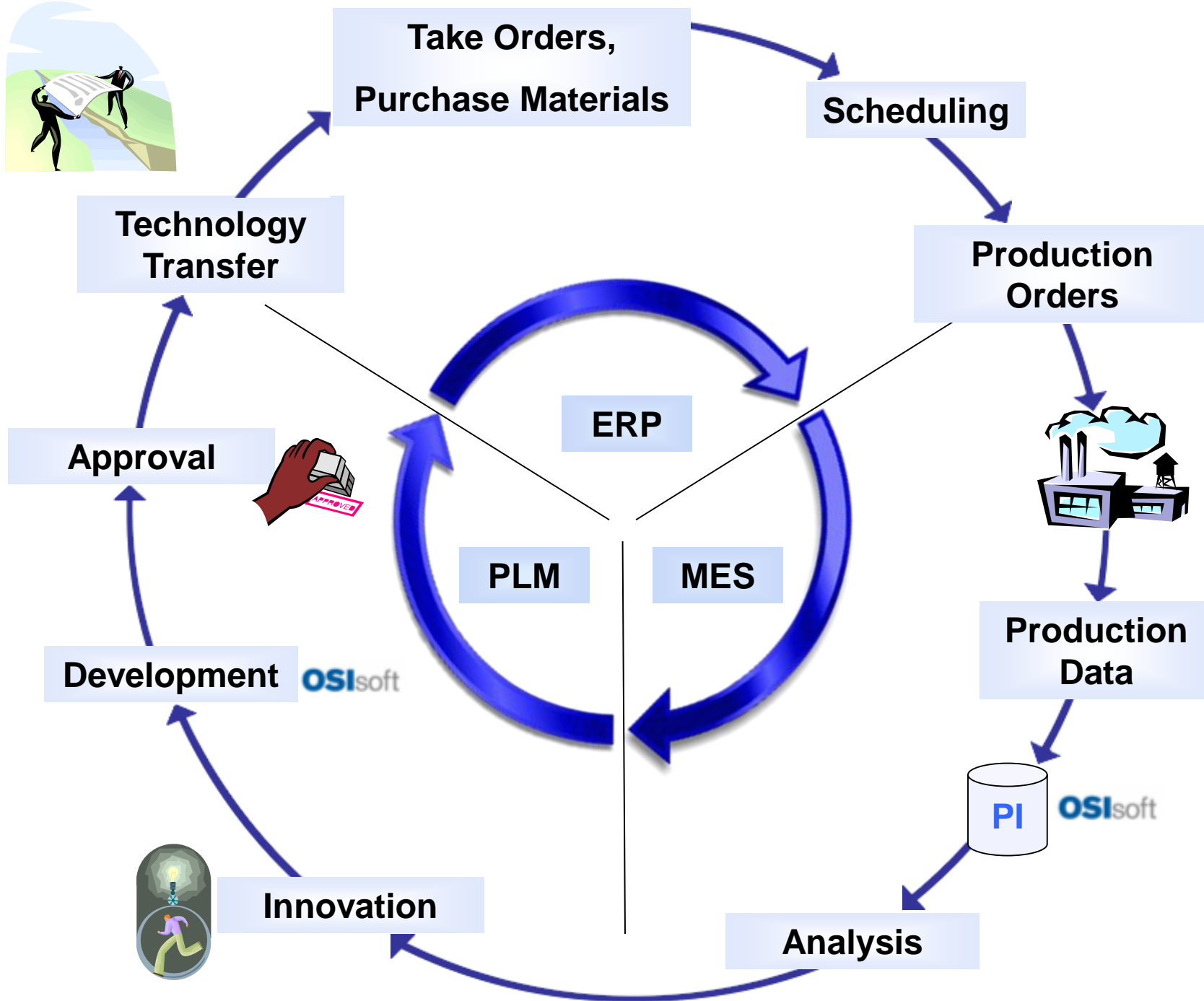
**Production  
Data**



**OSIsoft**

**Analysis**

**Innovation**

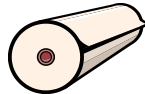


# You are Already Doing PLM

- *If your company sells products:*



- Chemicals
- Consumer Packaged Goods
- Pharmaceuticals
- Food & Beverage
- Pulp & Paper
- Oil and Gas
- Automotive



- *You are already doing PLM as:*

- Recipe Management
- Specification Management
- Formula Management

- *How well are you managing your products?*



# *PLM Manages the Complete Product*

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- *Capture*
  - *Product intent and customer expectations*
  - *Chemical and Physical properties*
  - *Raw materials and parts*
  - *Manufacturing procedures*
- *Manage*
  - *Corporate knowledge about the product*
  - *Change over time*
  - *Interaction with enterprise systems*
- *Results in increased speed to market*



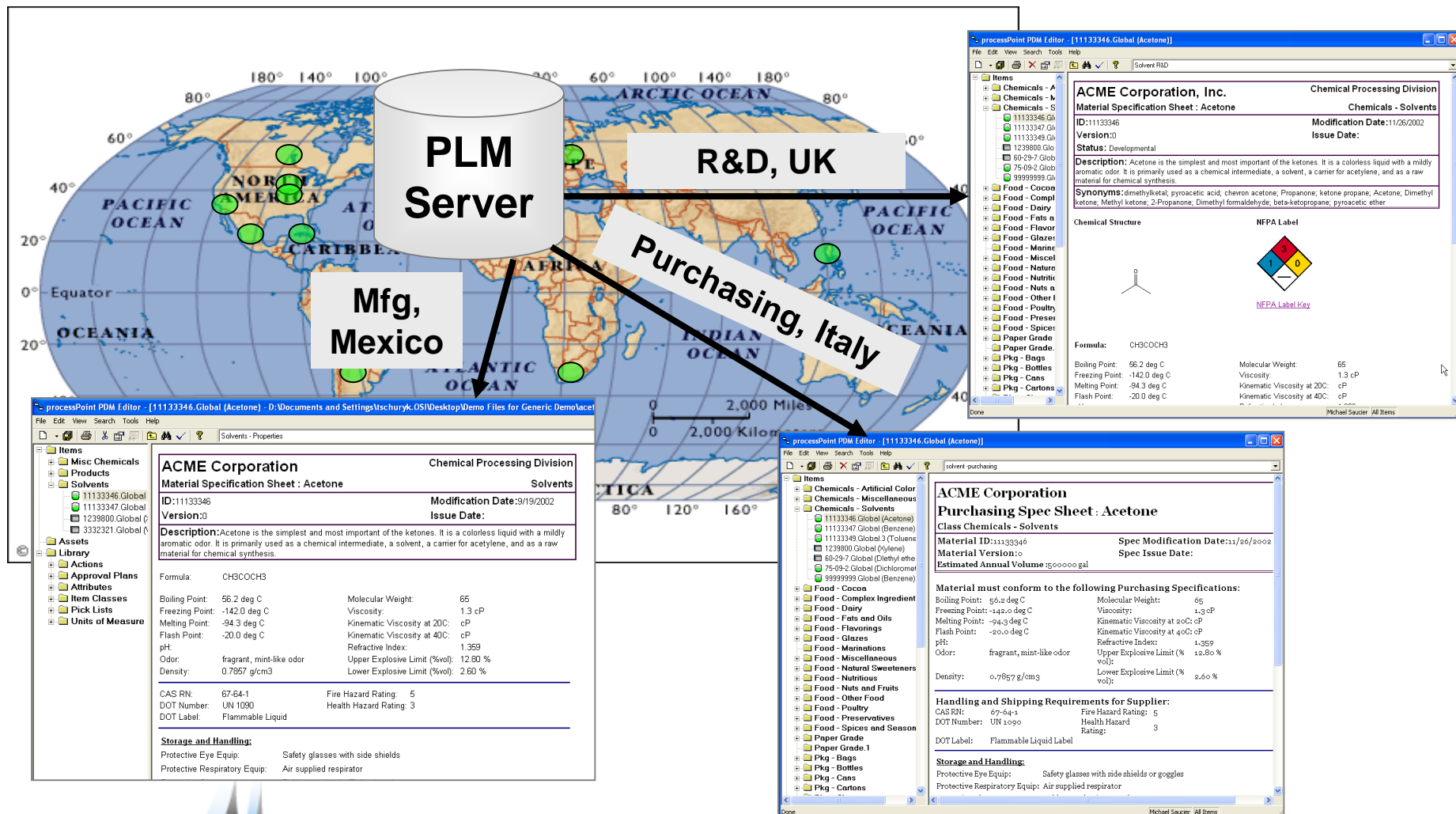
# ***PLM Manages the Complete Product Forever***

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- *Your products will change over time*
  - *Customer demands*
  - *Cost reduction initiatives*
  - *Product improvements*
  - *Regulatory changes*
- *You will want to have accessible:*
  - *Product past (Obsolete)*
  - *Product present (Approved)*
  - *Product future (Developmental, Awaiting Approval)*
- *You will want to save these versions forever*
  - *Regulatory*
  - *Re-use*
  - *History for comparison to manufacturing*



# PLM: System of Record for Users

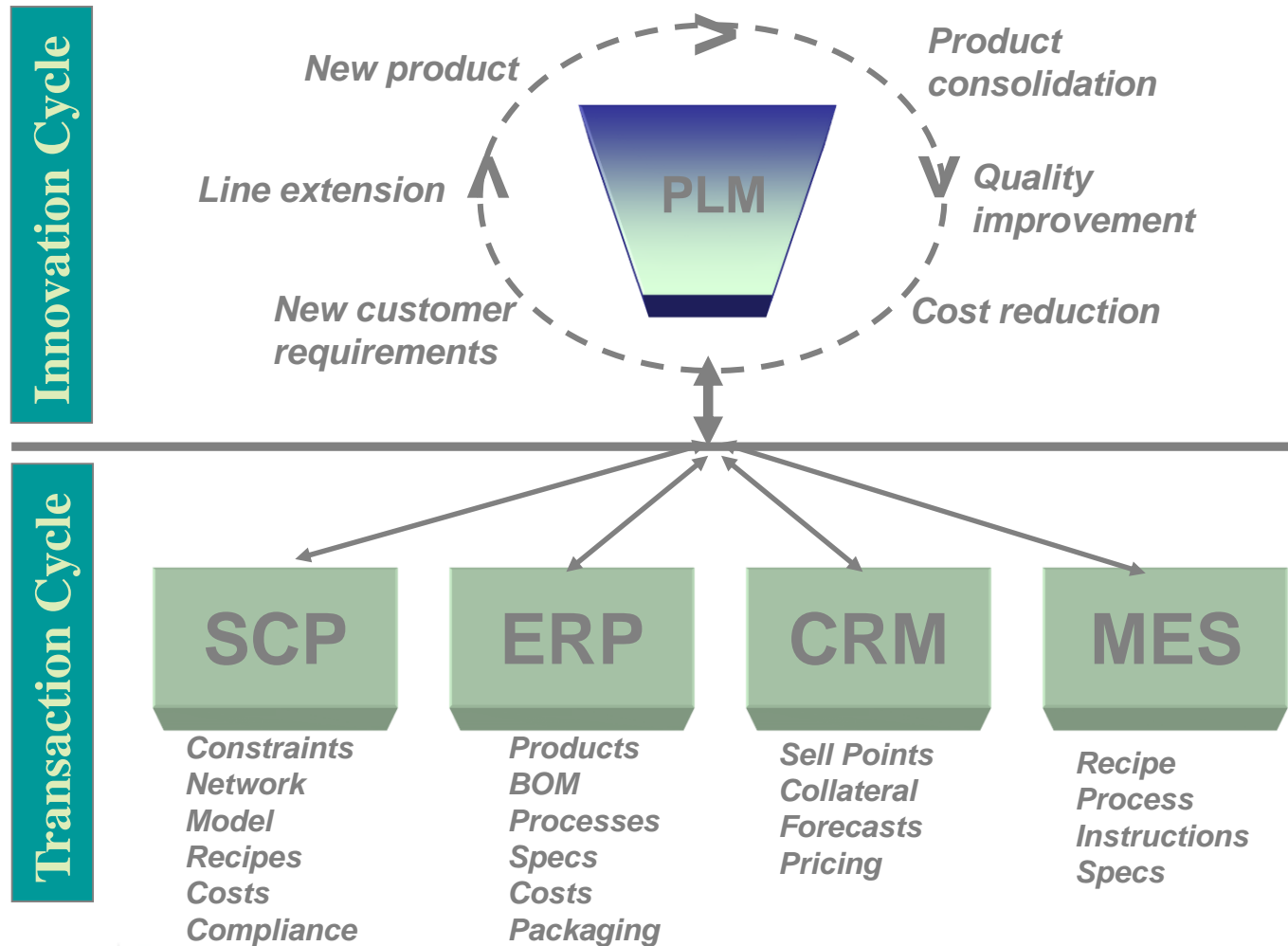


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# PLM: System of Record for Systems



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# *Demonstration*

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# *Creating Products with ProcessPoint*

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- *What is a PLM System?*
- ***Creating Products with ProcessPoint***
- *ProcessPoint in an Enterprise*
- *ProcessPoint in Manufacturing*
- *Summary*

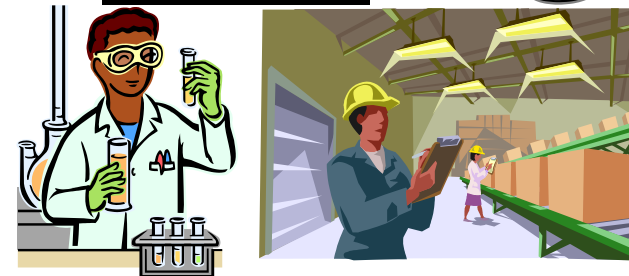


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# ProcessPoint Users

- *Chemists*
  - Responsible for formulations to meet product design goals
- *Packaging Engineers*
  - Responsible for design and material selection for bottles, labels, caps, etc.
- *Process Engineers*
  - Responsible for reliably manufacturing the product to the specifications
- *Read-only Users*
  - Procurement, manufacturing, marketing, project management, quality assurance, inventory control, etc.



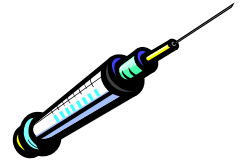
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# Ability to Find & Re-use Existing Products

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- *Reuse: "...30-40% of what you are innovating was done before, but you forgot\*"*
- *How do you rapidly find the set of products that:*
  - *Solves a particular customer need?*
  - *Uses a raw ingredient?*
  - *Has specific chemical & physical properties?*
  - *Was in effect during a certain timeframe?*
- *In a company that has:*
  - *100s or 1000s of products, each having*
    - *Hundreds of performance and process specifications*
    - *Many versions or site variations*



\*Williard Zangwill  
Graduate School of Business, University of Chicago



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# *Ability to Tightly Control Changes*

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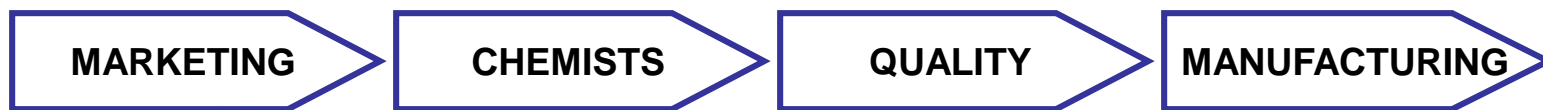
- *Ideally, an R&D group would:*
  - *Reuse known, approved products that are 'close' to your new requirements*
  - *Make changes only for new requirements*
  - *Specify products in an unambiguous manner*
  - *Provide the results in a format understandable by everyone in your company*
- *Ideally, your employees could:*
  - *Easily access this data for their needs*
  - *Audit the changes, to compare products*



# *Ability to Obtain Review and Approval*

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- *Products cannot simply change*
  - *This could cause manufacturing problems*
  - *When are product changes about to happen?*
  - *Who should get involved in these changes?*
- *When asked to approve a new product*
  - *An approver needs an easy way to see exactly what has changed*
  - *An approver needs to be able to accept or reject changes*



# *Demonstration*

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# ***ProcessPoint in an Enterprise***

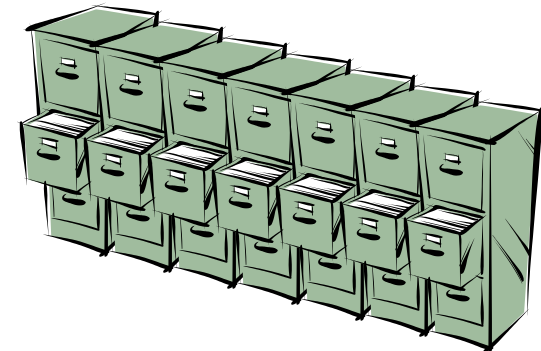
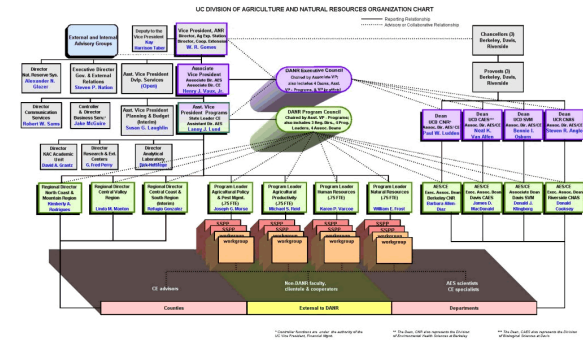
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- *What is a PLM System?*
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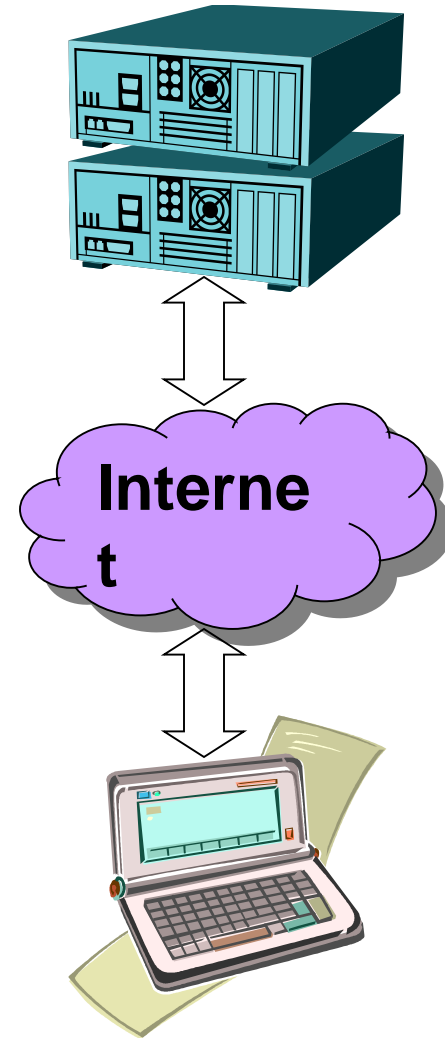
# Challenges of an Enterprise Solution

- Geographical Boundaries
  - Many manufacturing sites
  - Many development centers
- Organizational Boundaries
  - Can be complex
  - Variety of users and roles
  - Variety of tasks
- Large Numbers
  - 100,000s of materials
  - 10,000s of products
  - 100s or 1000s of users



# *The Internet Addresses Geography*

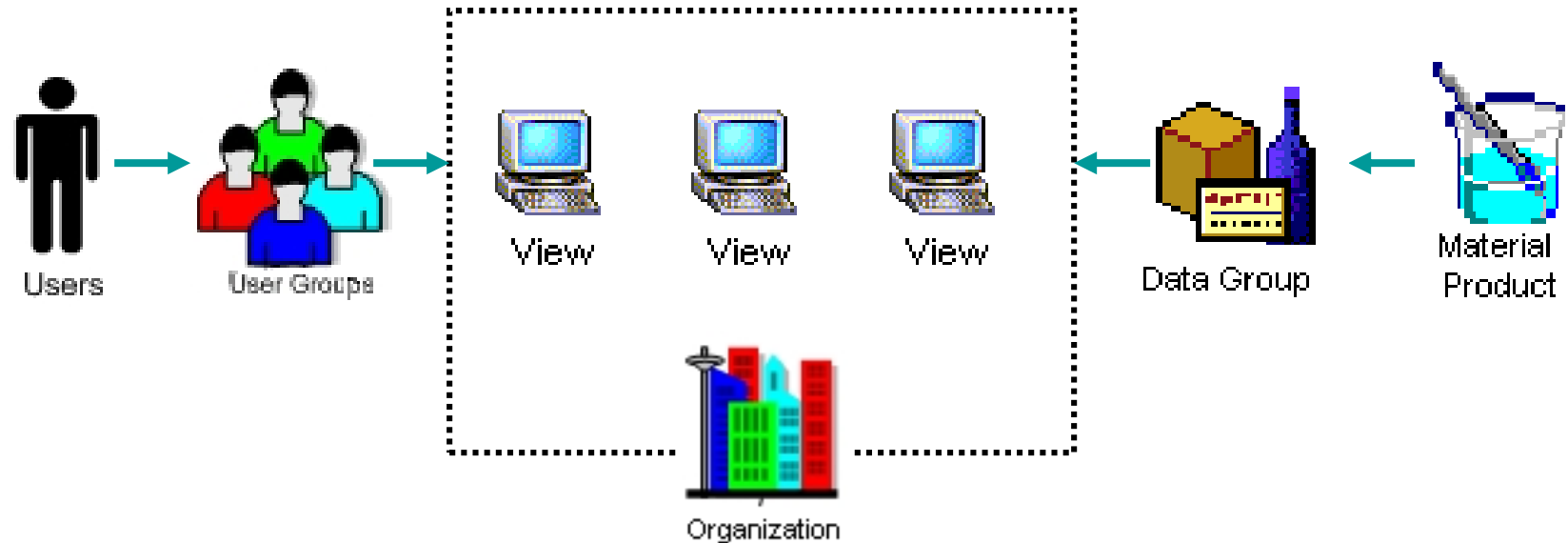
- *ProcessPoint covers the complete breadth of the new product innovation cycle from initial concept to shippable product with:*
  - *ProcessPoint Server - central web services data repository that is used to capture the knowledge about a company's products*
  - *ProcessPoint Client – client-based tools that capture the data about a company's products and enhance the way this information is shared*
  - *ProcessPoint Tools – client-based tools that enable the implementation and commissioning of ProcessPoint, including bulk loading, display authoring and administration*



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# Security & Organizational Boundaries



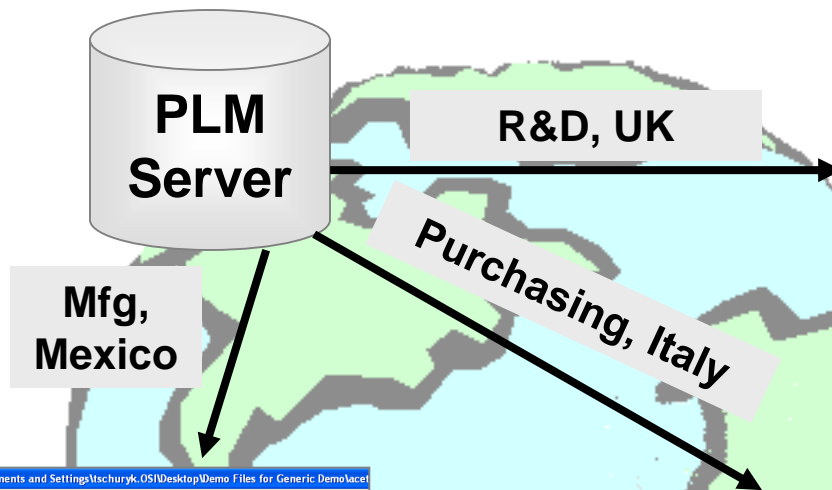
- *Share information where appropriate*
- *Limit access where appropriate*
- *Policy-based administration*



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# Group Specific Tasks



**processPoint PDM Editor - [11133346.Global (Acetone)]**

File Edit View Search Tools Help

Solvent P&ID

**Items**

- Chemicals - A
- Chemicals - M
- Chemicals - S
  - 11133346.Glo
  - 11133347.Glo
  - 11133348.Glo
  - 1239800.Glo
  - 68-29-7.Glob
  - 75-09-2.Glob
  - 99999999.Glo
- Food - Cocoa
- Food - Compl
- Food - Dairy
- Food - Fats a
- Food - Flavor
- Food - Glaze
- Food - Marin
- Food - Miscel
- Food - Nature
- Food - Nutriti
- Food - Nuts a
- Food - Other I
- Food - Poultry
- Food - Preser
- Food - Spice
- Paper Grade
- Pkg - Bags
- Pkg - Bottles
- Pkg - Cans
- Pkg - Cartons

**ACME Corporation, Inc.** Chemical Processing Division  
Chemicals - Solvents

**Material Specification Sheet : Acetone**

ID:11133346  
Version:0  
Status: Developmental

**Description:** Acetone is the simplest and most important of the ketones. It is a colorless liquid with a mildly aromatic odor. It is primarily used as a chemical intermediate, a solvent, a carrier for acetylene, and as a raw material for chemical synthesis.

**Synonyms:** dimethylketal, pyroacetic acid, chevron acetone, Propanone, ketone propane, Acetone, Dimethyl ketone, Methyl ketone, 2-Propanone, Dimethyl formaldehyde, beta-ketopropane, pyroacetic ether

**Chemical Structure**

**NFPA Label**

Formula: CH3COCH3

Boiling Point: 56.2 deg C  
Freezing Point: -142.0 deg C  
Melting Point: -94.3 deg C  
Flash Point: -20.0 deg C

Molecular Weight: 60  
Viscosity: 1.3 cP  
Kinematic Viscosity at 20C: cP  
Kinematic Viscosity at 40C: cP

Michael Sauter: All Items

**processPoint PDM Editor - [11133346.Global (Acetone)]**  
D:\Documents and Settings\tschuryk.05\Desktop\Demo Files for Generic Demo\acetone

File Edit View Search Tools Help

Solvents - Properties

**Items**

- Misc Chemicals
- Products
- Solvents
  - 11133346.Global
  - 11133347.Global
  - 1239800.Global
  - 3332321.Global
- Assets
- Library
- Actions
- Approval Plans
- Attributes
- Item Classes
- Pick Lists
- Units of Measure

**ACME Corporation** Chemical Processing Division  
Material Specification Sheet : Acetone Solvents

ID:11133346  
Version:0  
Modification Date: 9/19/2002  
Issue Date:

**Description:** Acetone is the simplest and most important of the ketones. It is a colorless liquid with a mildly aromatic odor. It is primarily used as a chemical intermediate, a solvent, a carrier for acetylene, and as a raw material for chemical synthesis.

Formula: CH3COCH3

Boiling Point: 56.2 deg C  
Freezing Point: -142.0 deg C  
Melting Point: -94.3 deg C  
Flash Point: -20.0 deg C  
pH:  
Odor: fragrant, mint-like odor  
Density: 0.7857 g/cm3

Molecular Weight: 60  
Viscosity: 1.3 cP  
Kinematic Viscosity at 20C: cP  
Kinematic Viscosity at 40C: cP  
Refractive Index: 1.359  
Upper Explosive Limit (%vol): 12.80 %  
Lower Explosive Limit (%vol): 2.60 %

CAS RN: 67-64-1  
DOT Number: UN 1090  
DOT Label: Flammable Liquid

Fire Hazard Rating: 5  
Health Hazard Rating: 3

**Storage and Handling:**  
Protective Eye Equip: Safety glasses with side shields  
Protective Respiratory Equip: Air supplied respirator

**processPoint PDM Editor - [11133346.Global (Acetone)]**

File Edit View Search Tools Help

solvent-purchasing

**Items**

- Chemicals - Artificial Color
- Chemicals - Miscellaneous
- Chemicals - Solvents
  - 11133346.Global (Acetone)
  - 11133347.Global (Benzene)
  - 11133348.Global (Toluene)
  - 1239800.Global (Polyene)
  - 68-29-7.Global (Diethyl ethe)
  - 75-09-2.Global (Dichloromet)
  - 99999999.Global (Benzene)
- Food - Cocoa
- Food - Complex Ingredient
- Food - Dairy
- Food - Fats and Oils
- Food - Flavorings
- Food - Glazes
- Food - Marinations
- Food - Miscellaneous
- Food - Natural Sweeteners
- Food - Nutritious
- Food - Nuts and Fruits
- Food - Other Food
- Food - Poultry
- Food - Preservatives
- Food - Spices and Season
- Paper Grade
- Paper Grade.1
- Pkg - Bags
- Pkg - Bottles
- Pkg - Cans
- Pkg - Cartons

**ACME Corporation**  
**Purchasing Spec Sheet : Acetone**  
Class Chemicals - Solvents

Material ID:11133346  
Material Version:0  
Estimated Annual Volume 5000000 gal

Spec Modification Date: 11/26/2002  
Spec Issue Date:

**Material must conform to the following Purchasing Specifications:**

Boiling Point: 56.2 deg C  
Freezing Point: -142.0 deg C  
Melting Point: -94.3 deg C  
Flash Point: -20.0 deg C  
pH:  
Odor: fragrant, mint-like odor  
Density: 0.7857 g/cm3

Molecular Weight: 60  
Viscosity: 1.3 cP  
Kinematic Viscosity at 20C: cP  
Kinematic Viscosity at 40C: cP  
Refractive Index: 1.359  
Upper Explosive Limit (% vol): 12.80 %  
Lower Explosive Limit (% vol): 2.60 %

**Handling and Shipping Requirements for Supplier:**  
CAS RN: 67-64-1  
DOT Number: UN 1090  
DOT Label: Flammable Liquid Label

Fire Hazard Rating: 5  
Health Hazard Rating: 3  
Rating:

**Storage and Handling:**  
Protective Eye Equip: Safety glasses with side shields or goggles  
Protective Respiratory Equip: Air supplied respirator

Michael Sauter: All Items

# Displays for Specific Tasks

- *Project teams can configure custom displays*

The screenshot displays two windows from the ProcessPoint PDM Editor. The background window, titled 'processPoint PDM Editor - [00009029.GLOBAL.1 (WATER (DEIONIZED)) - C:\77777.xml]', shows a tree view on the left with folders for Items, Assets, Library, Actions, Approval Plans, Attributes, Item Classes, Pick Lists, and Units of Measure. The main area displays a custom configuration for 'ACME CHEMICAL' under the 'CHEMICAL INGREDIENT SPECIFICATION' section, marked as 'Non-Food'. This configuration includes a 'Supersedes' section with fields for Part Number (9029), Revision, Issue Date (07/07/1997), and Status (Approved). It also features a table for 'INCI Names for Components' with columns for %, CAS, and EINECS #. A 'Specification' table lists methods (1-8) and their corresponding analytical/physical tests and specifications. The foreground window, titled 'Template Editor - [assembled partitions.xml]', shows a form with fields for 'IBU (Division):', 'Item Name:', 'Spec Create Reason:', 'Open Stock?', 'Supersedes' (with Part Number and Issue Date), 'Catalog Number:', 'Unit Count:', and 'Product Description:'. The status bar at the bottom of the PDM Editor window indicates 'Not logged in' and 'Offline'.

**ACME CHEMICAL**  
IBU (Division): value

Item Name: value  
Spec Create Reason: value  
Open Stock? value

Supersedes  
Part Number: value value  
Issue Date: date

Catalog Number: value Unit Count: value  
Product Description: value

**ACME CHEMICAL** **CHEMICAL INGREDIENT SPECIFICATION**  
Non-Food

Supersedes  
Part Number: 9029 Status: Approved  
Revision: Part Number: 00009029 - 1  
Issue Date: 07/07/1997 Issue Date: 9/21/1999  
Modification Date: 5/1/2001

INCI Names for Components	%	CAS	EINECS #
WATER (DEIONIZED)		7732-18-5	

Method #	Analytical/Physical Test	Specification
1. VISUAL	* APPEARANCE AND COLOR	CLEAR COLORLESS LIQUID
2. AC 1004C0	* ODOR: JAR	TO MATCH REFERENCE
3. AC1020AD	* IRON	0.1 ppm MAX.
4. AC1020AD	* HARDNESS (AS CaCO3)	8 ppm MAX.
5. AC 1020AD	* pH (HACH)	5-9
6. AC 1020AD	TOTAL CHLORINE (HACH)**	0 ppm
7.		
8.		

Done Not logged in Offline



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# *Demonstration*

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# *ProcessPoint Scalability*

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- *ProcessPoint supports the entire enterprise*
- *ProcessPoint has the security model and functions necessary to accomplish this*
- *With variations and versions, numbers can get large*
- *Current test limits:*
  - *100,000 raw materials*
  - *20,000 products*
  - *1000 simultaneous users*





# *ProcessPoint in Manufacturing*

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- *What is a PLM System?*
- *Creating Products with ProcessPoint*
- *ProcessPoint in an Enterprise*
- ***ProcessPoint in Manufacturing***
- *Summary*



# *Manufacturing Needs*

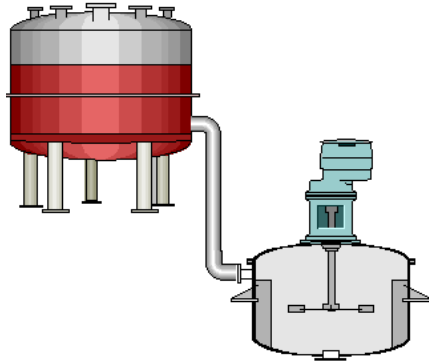
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- *What am I about to make?*
  - *An accurate description of the product*
  - *A reliable way to access and use this information*
- *How will I make it?*
  - *The correct raw materials*
  - *The exact procedure for manufacturing*
  - *The alarm limits*
- *How will I verify it is correct?*
  - *Sample points*
  - *Quality limits*



# Example Process

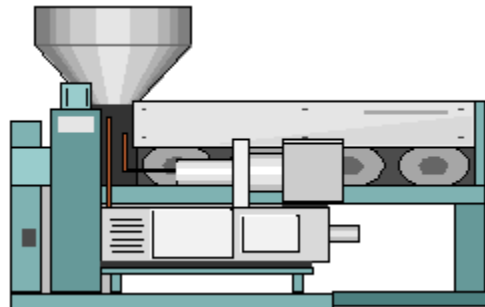
## Batch Process



Butch

- What ingredients to use
- Amounts to add
- Process parameters
- Durations

## Continuous Extrusion



Jody

- Intended setpoints
- Quality limits
- Alarm limits

## Quality Assurance



Vince

- Product Intended properties
- When to sample
- Quality limits
- Certificate of Analysis format



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# *Demonstration*

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# Summary

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- *What is a PLM System?*
  - *Enterprise-wide system for products and materials*
  - *Complete product, stored forever*
- *How is ProcessPoint used to create products?*
  - *With lifecycle tools such as search, compare, structured authoring, electronic approvals, audit trail*
- *How is ProcessPoint used in an enterprise?*
  - *Scalable design, security model designed for multiple locations, Internet access*
- *How is ProcessPoint used in manufacturing?*
  - *By supplying current product procedure and specification data through ICE and ProcessBook*





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RTIPM

*True collaboration is only  
realized when there is  
“one version of the truth”*