



446.326A CAD/CAM

Product Data Management (PDM) & Product Lifecycle Management (PLM)

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Outline

Introduction of PDM

Components

Functionality

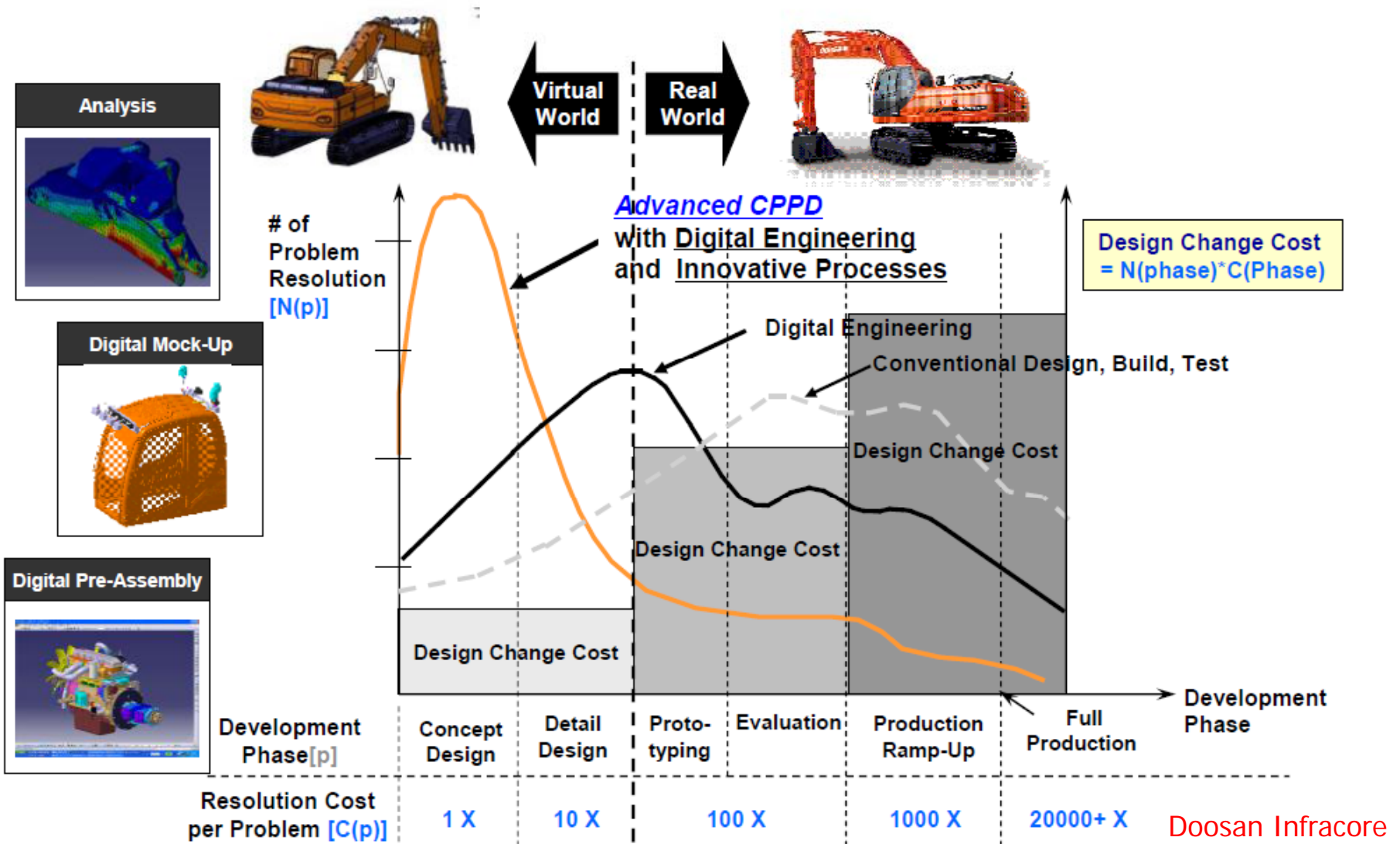
Range

Trends

ERP, BOM, MPS, PLM

Photo copyright: Sung-Hoon Ahn

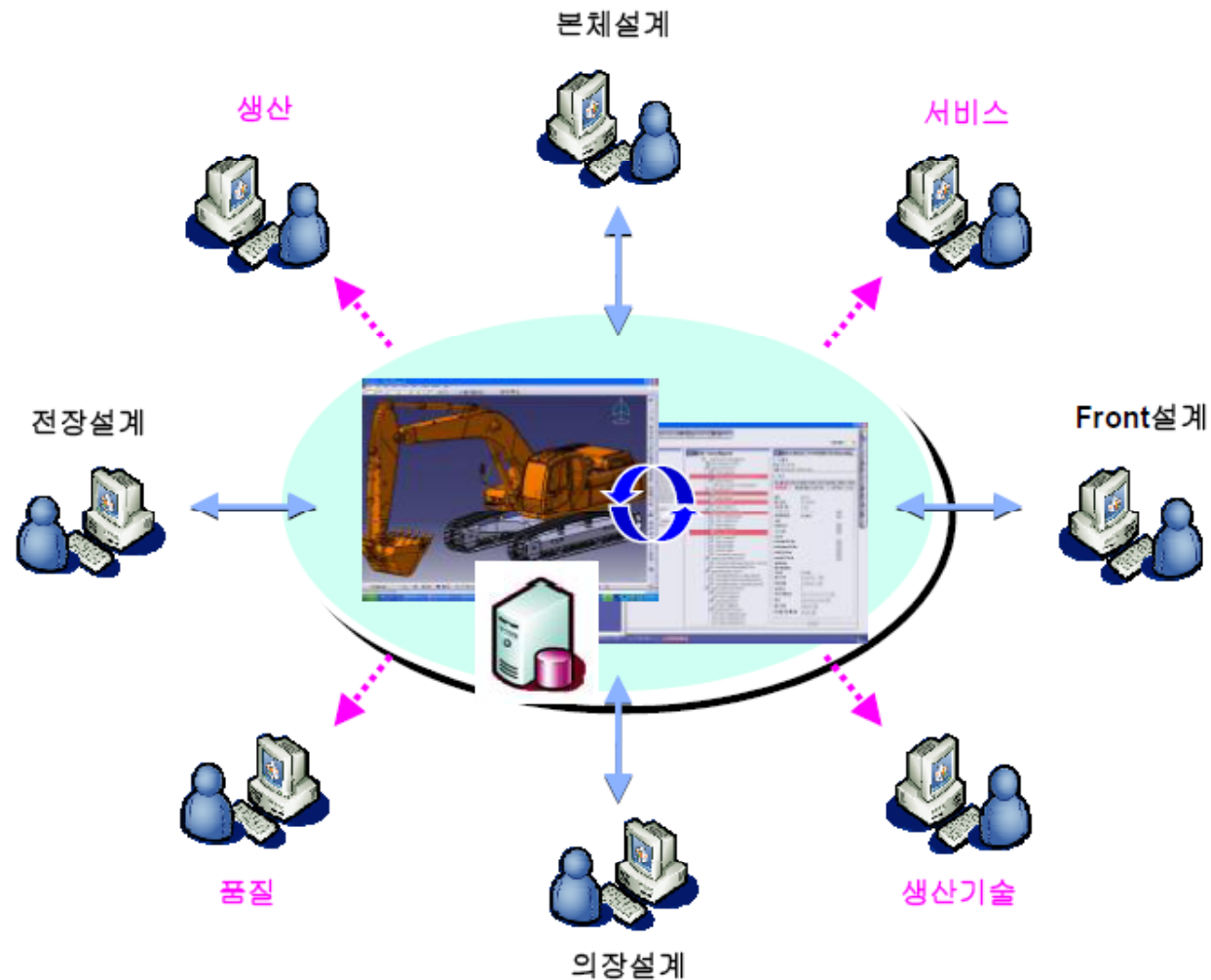
Front-end loading



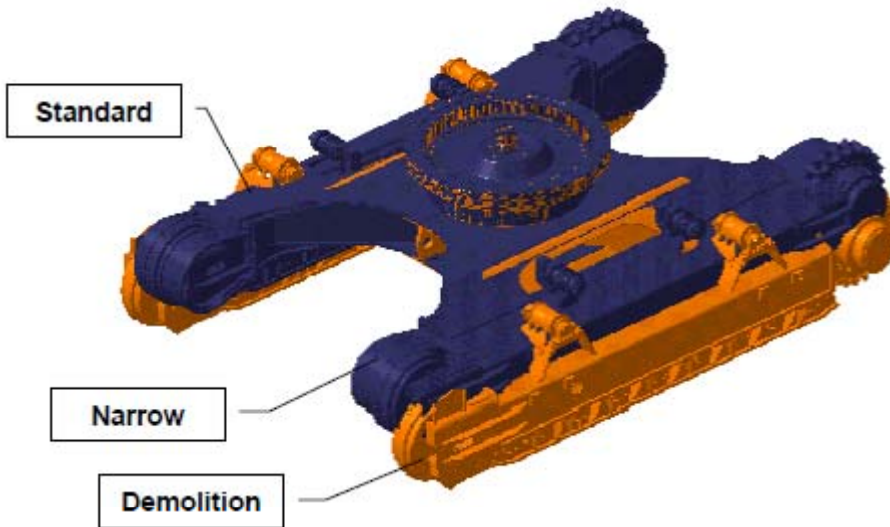
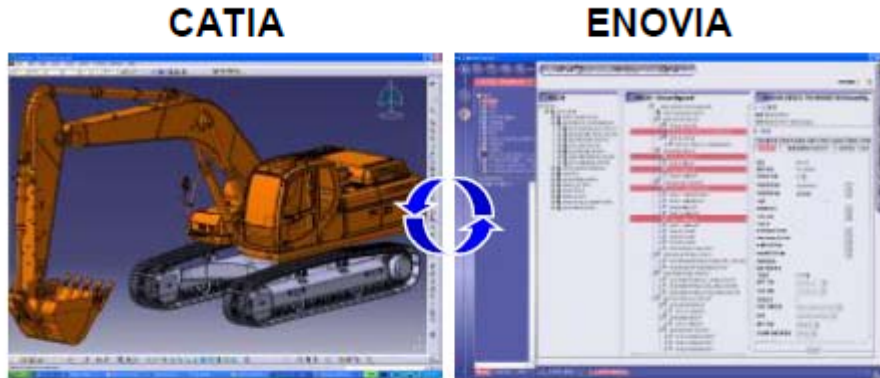
Real time collaboration



- Design in Context
- Any Body, Any Time, Any Where



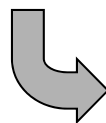
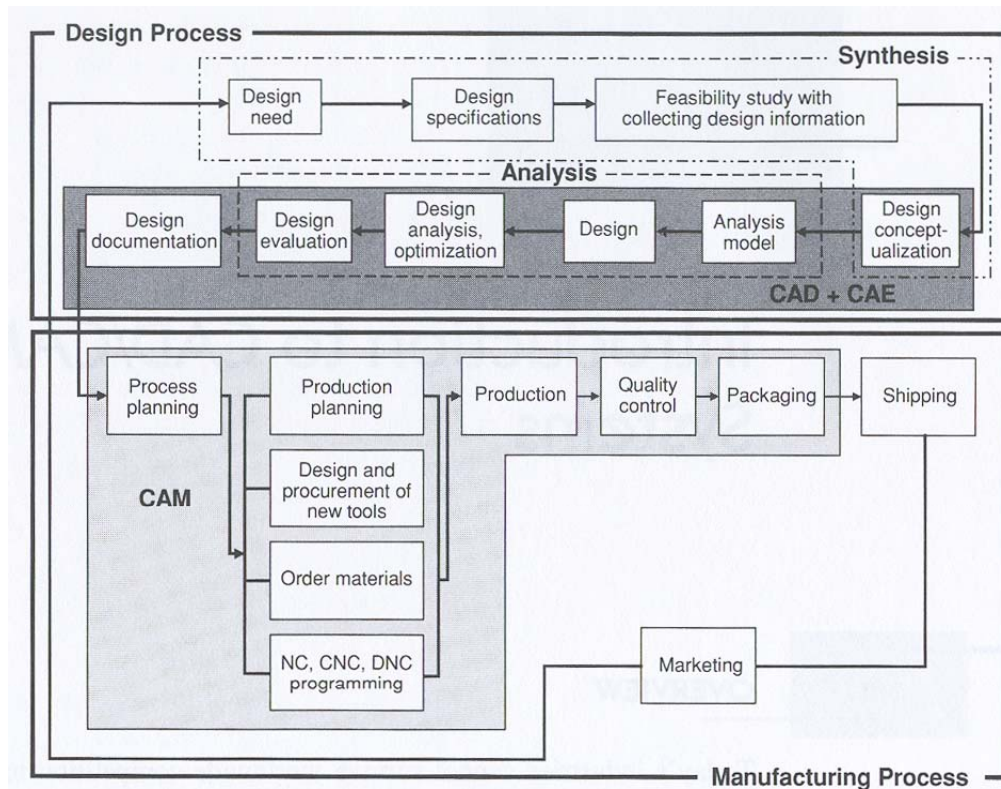
Various configurations



Introduction of PDM



- Product Development Process is becoming more complex

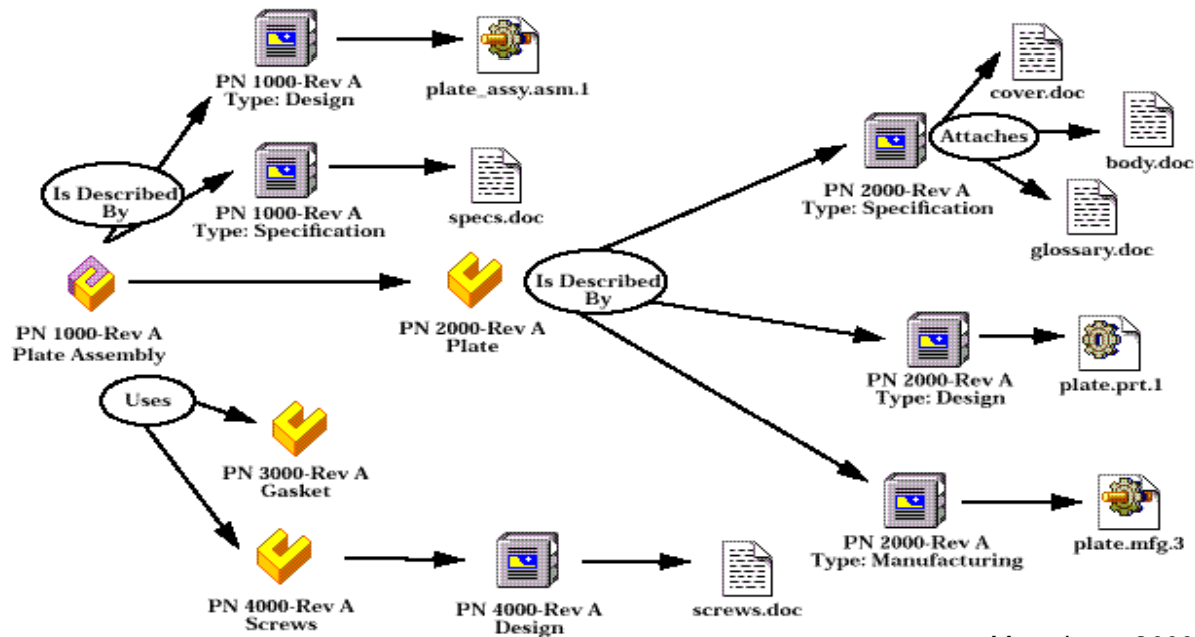


Increase the needs of management system throughout the development process

What is PDM



- Product Data Management
- “Electronic handling and control of product information throughout the whole product life cycle across system and organization boundaries.”



Metaphase, 2000

< Diagram of PDM system >

Related terms



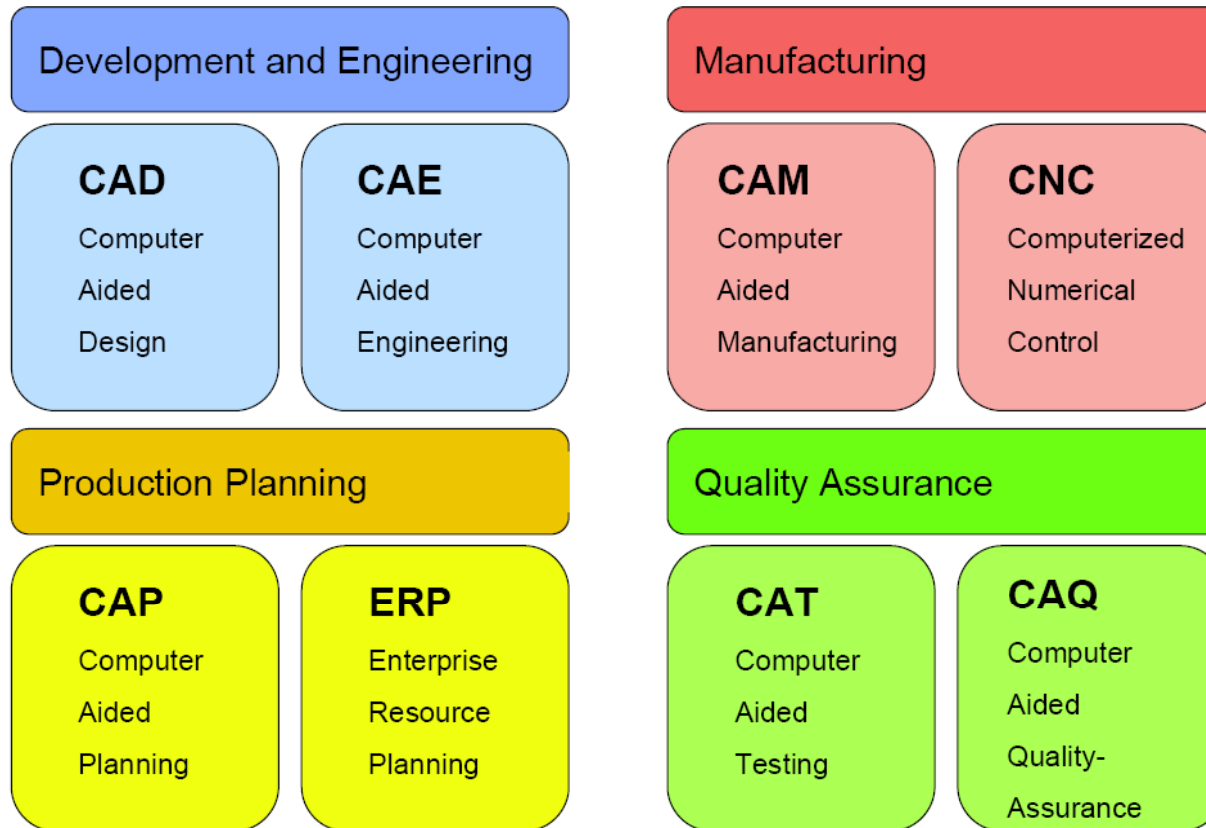
- PLM (Product Lifecycle Management)
- PKM (Product Knowledge Management)
- PDT (Product Data Technology)
- PIM (Product Information Management)



Components of PDM



- PDM system integrate most sub systems related to product design and manufacturing domain.



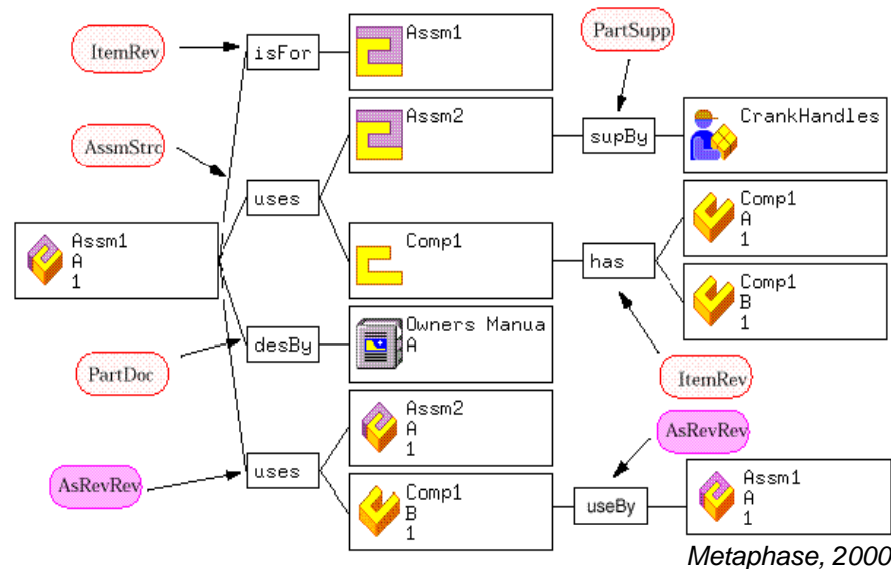
< Sub-systems in PDM >

Functionality of PDM

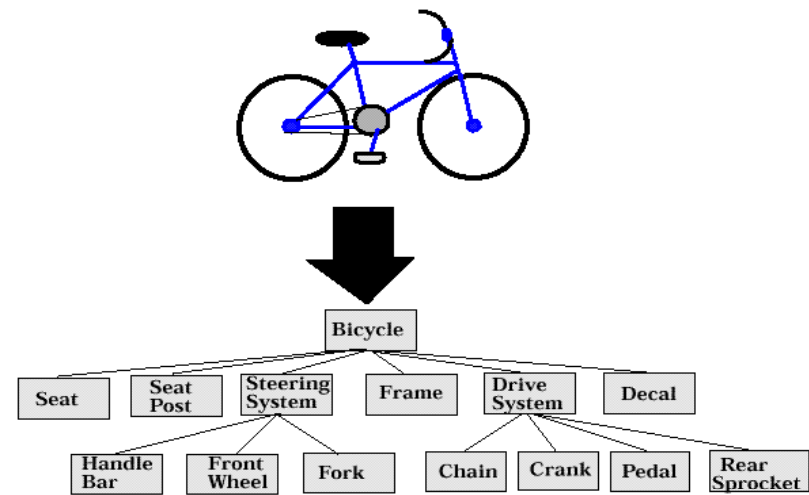


- In IT environment

- Version management
 - Document management
 - Product structure management
 - ...
- Data distribution
 - Configuration management
 - Search functions



< Displaying Product Structure >

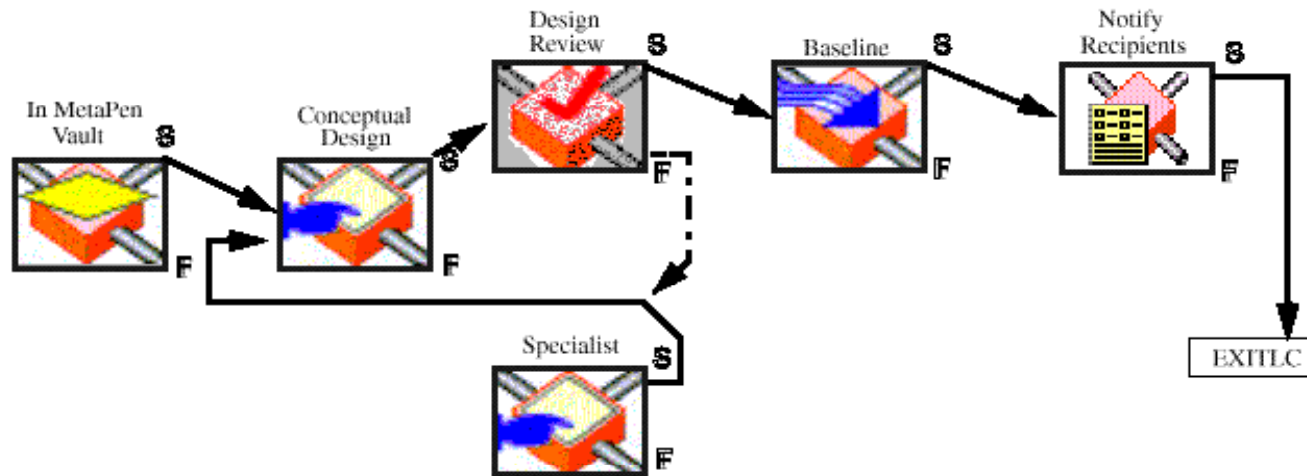


< Part Structure Manager >

Functionality of PDM (cont.)



- In product development process
 - Workflow management
 - Process management
 - Project management
 - Demand management
 - ...



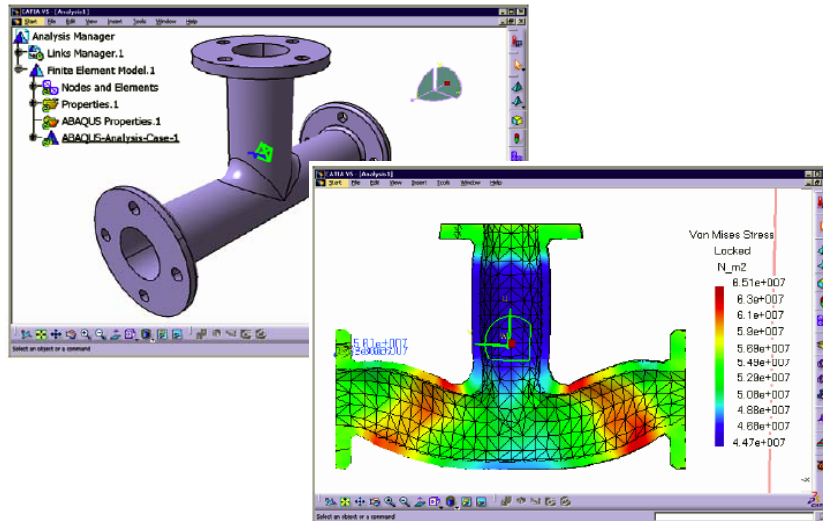
Metaphase, 2000

< Life Cycle Manager >

Functionality of PDM (cont.)

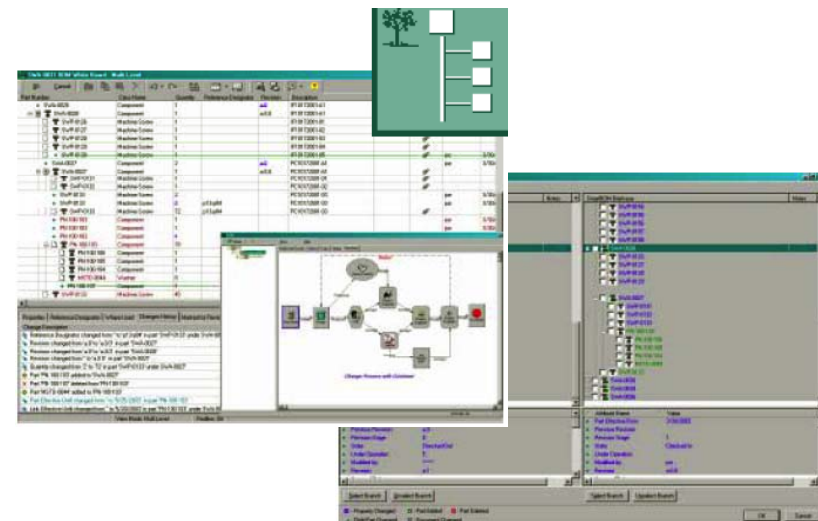


- In product design and analysis
 - Parts management
 - Visualizing
 - BOM (Bill of Material) generation
 - ...



CATIA R13, 2005

< CAE with CAM system >



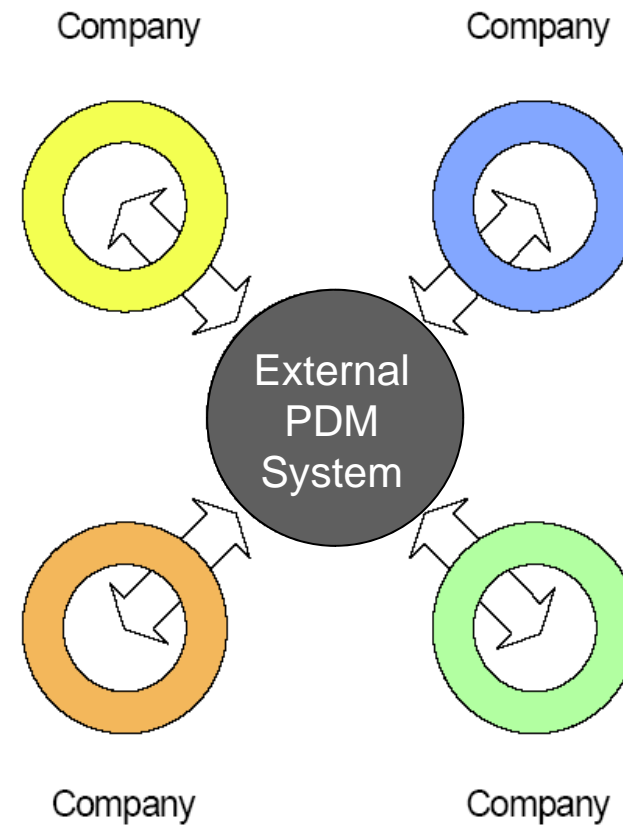
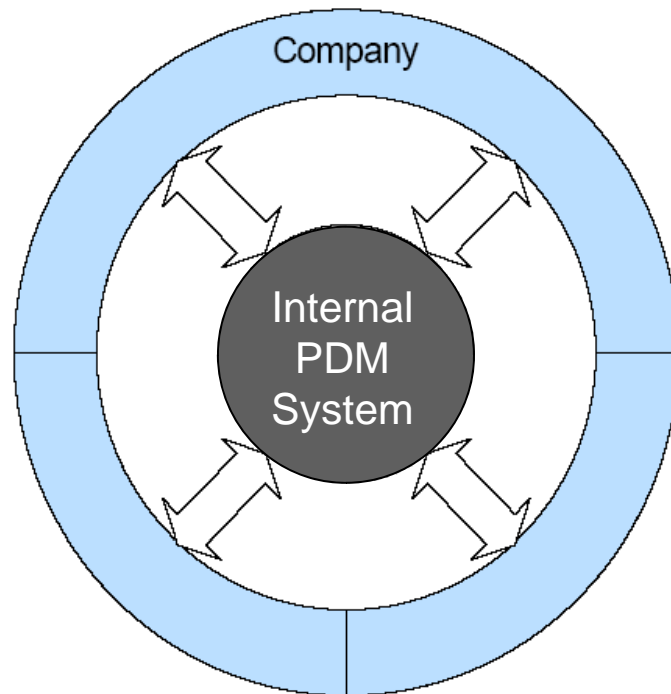
CATIA R13, 2005

< BOM with workflow >

Range of PDM



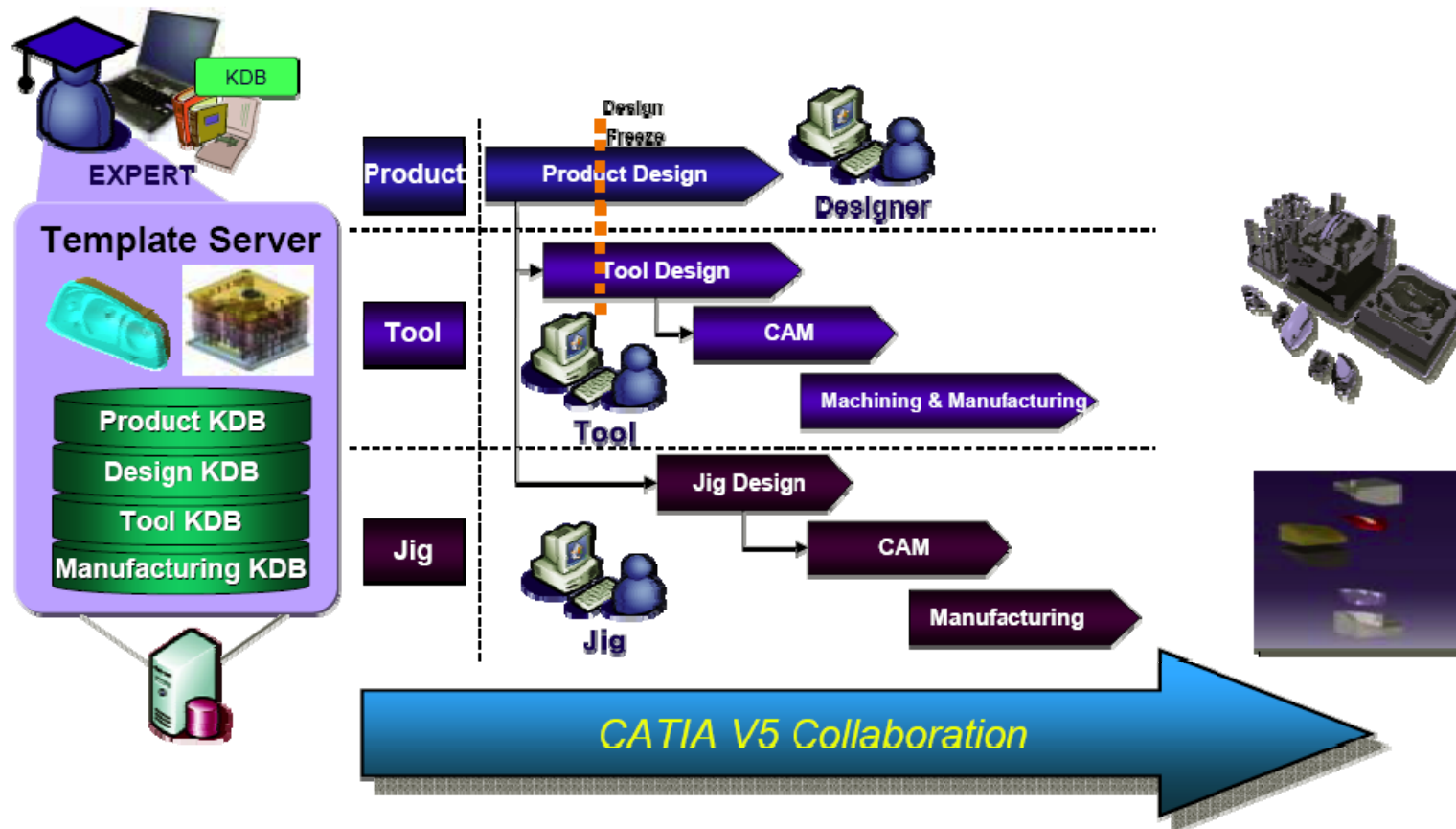
- Integrate overall areas of product life-cycle through internet, intranet or etc.



Today's Trends of PDM



- Collaboration environment



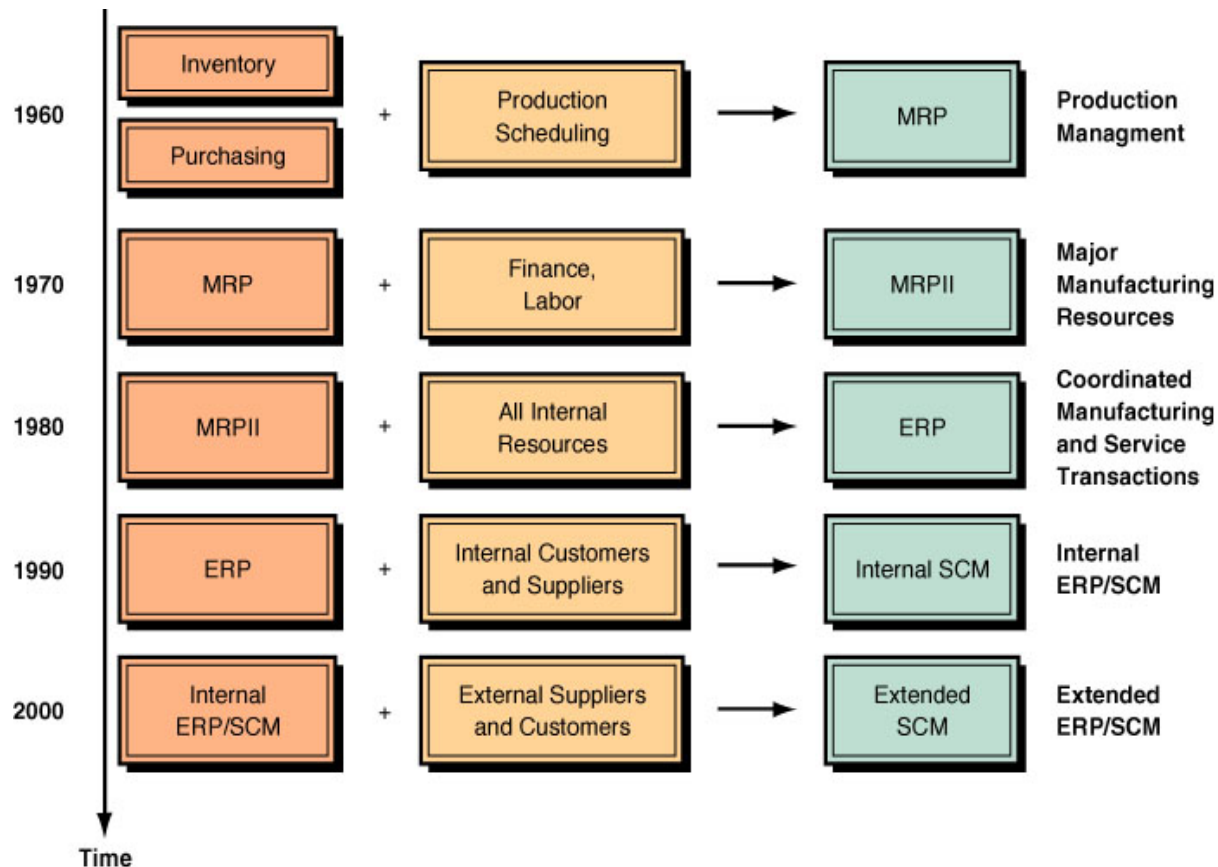
CATIA R13, SAMLIP Co., 2005

< Example of collaboration environment >

What is ERP



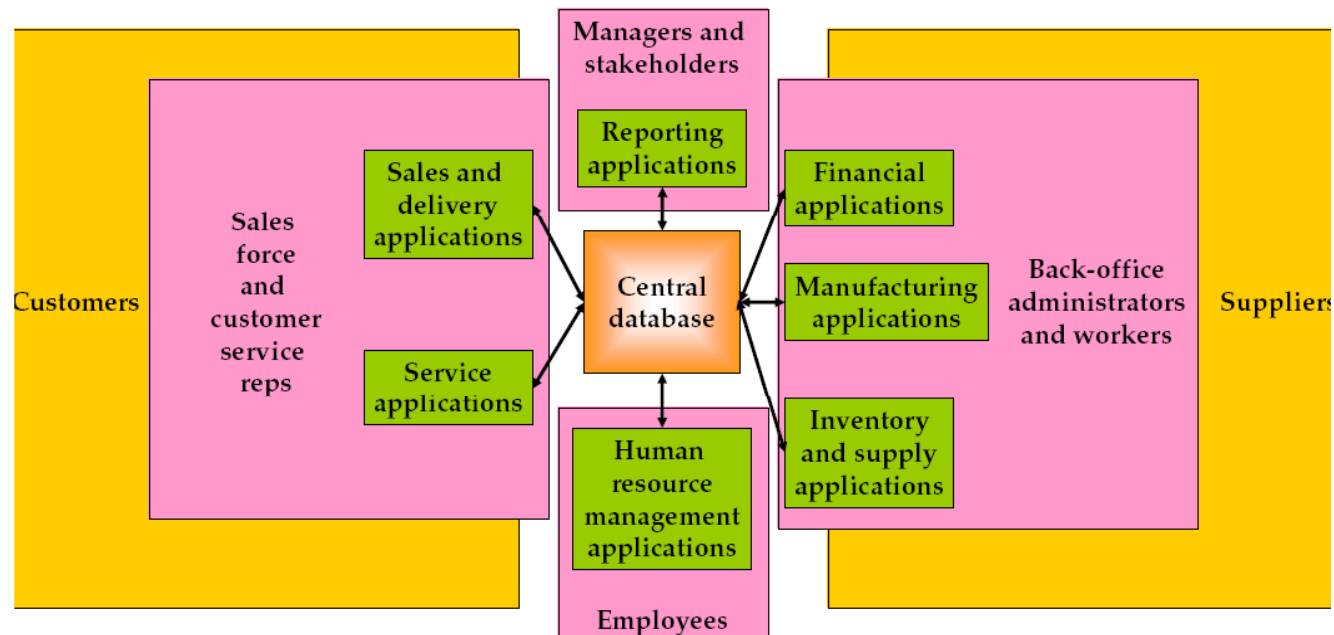
- Enterprise Resource Planning
 - 1970s MRP: Material Requirement Planning
 - 1980s MRPII: Manufacturing Resource Planning



What is ERP (cont.)



- Client Server Software
- Integrates Majority of Business Processes
- Processes Majority of Transactions
- Real Time Data Access

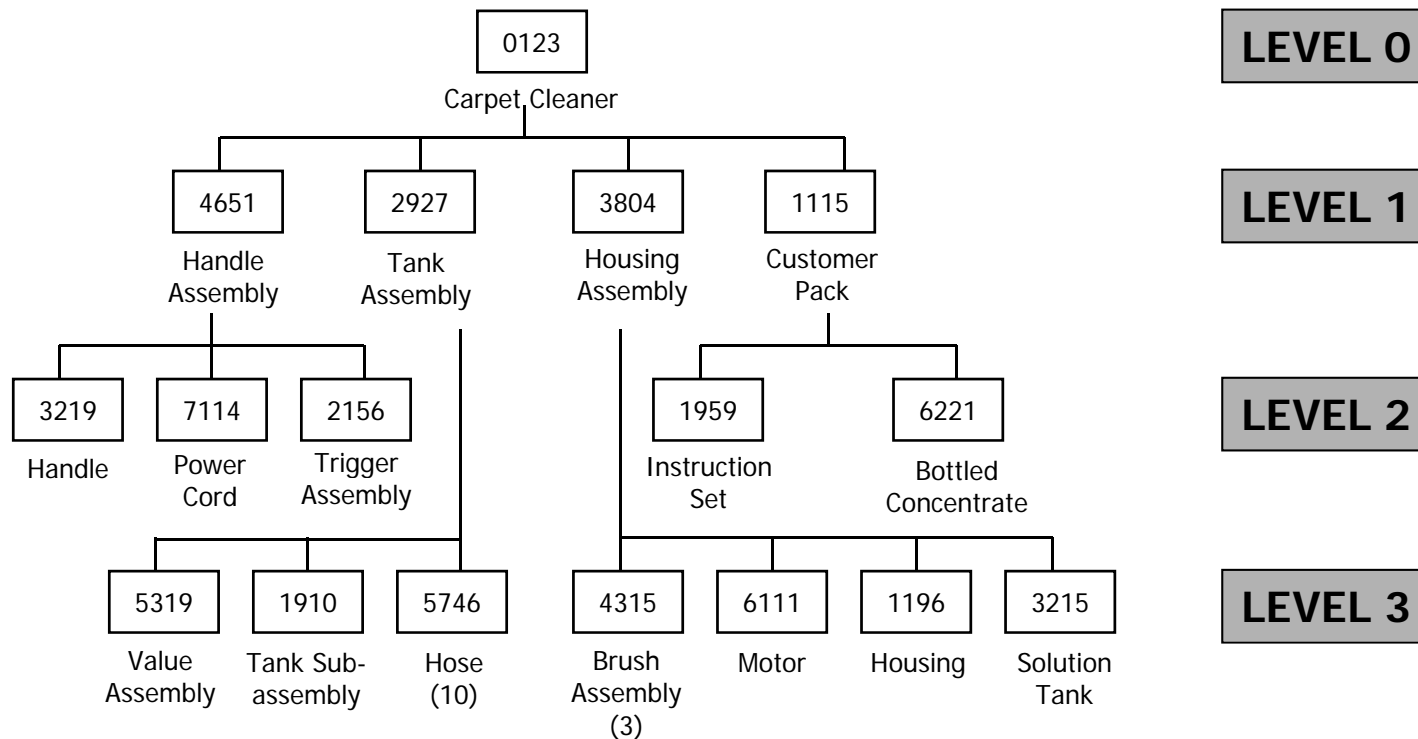


Source: T. Davenport, Putting the Enterprise into the Enterprise System, *Harvard Business Review*, July-August 1998, pp. 121-131

Bill of Material (BOM)



- Support to handle product variants in a convenient way



< Example of BOM >

Master Production Schedule (MPS)

- Plan of the company has developed for production, staffing, inventory, etc

11-14-2000 11:26:17	Demand	Regular Production	Overtime Production	Subcontracting Production	Total Production
Initial					
Period 1	250.00	175.00	50.00	25.00	250.00
Period 2	340.00	175.00	50.00	115.00	340.00
Period 3	400.00	175.00	50.00	175.00	400.00
Period 4	450.00	175.00	50.00	225.00	450.00
Total	1,440.00	700.00	200.00	540.00	1,440.00

OR-Notes, 2000

< Example of MPS >

Inventory Record



- A detailed listing of the volume, scope, and complexity of an organization's records, usually compiled for the purpose of creating a records schedule

(A Glossary for Archivists, Manuscript Curators, and Records Managers, Society of American Archivists: Chicago, 1992, p. 19)

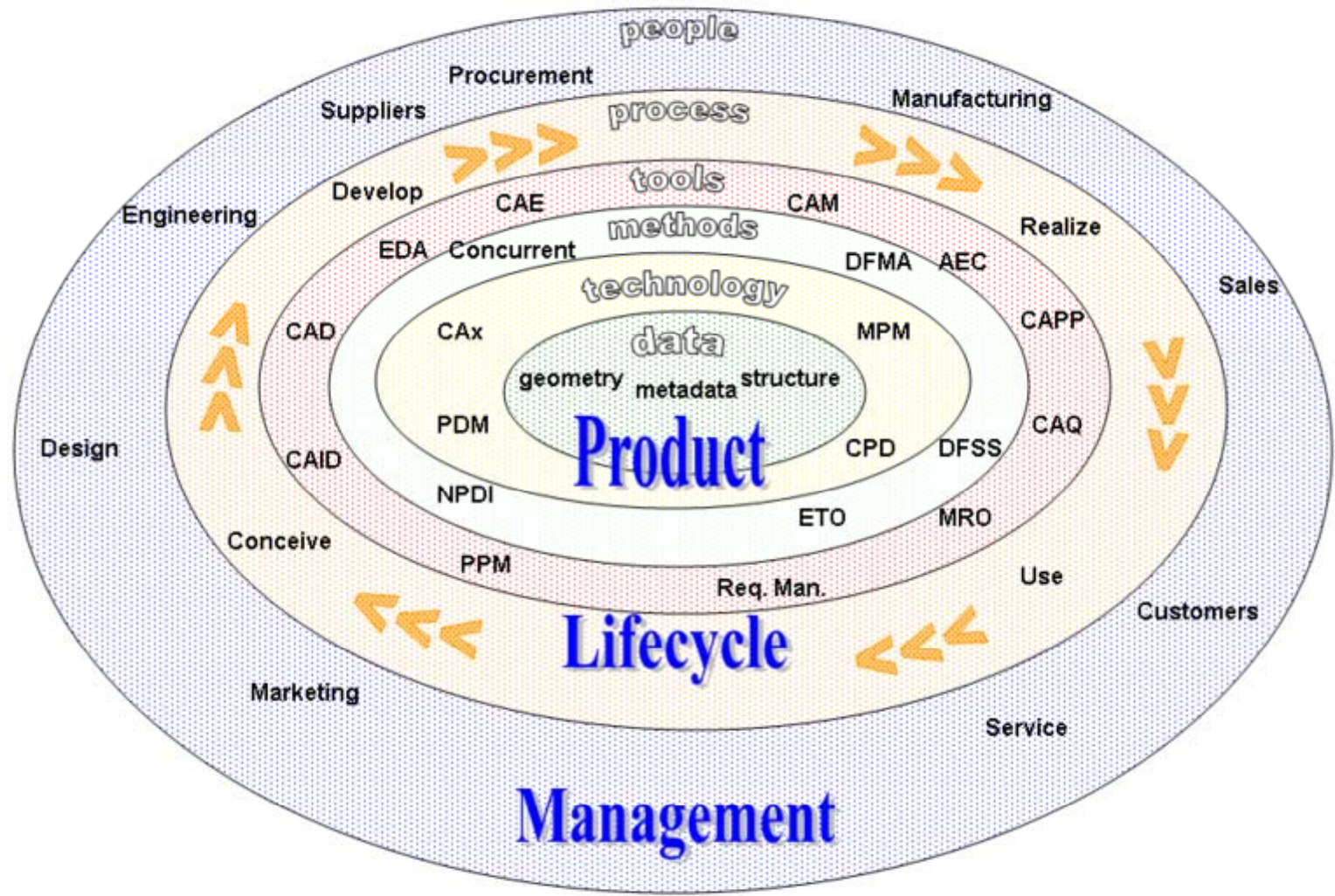
California Department of Education		Nutrition Services Division		
<i>Perpetual Inventory Record</i>				
Commodity:	<u>Applesauce 10</u>	School Year:	<u>2001-02</u>	
Pack Size:	<u>6/#10 cans</u>	Est. FMV per Unit:	<u>\$10.58</u>	
Section:	<u>Whse. 2, Aisle 14</u>			
Date	Units Rec'd	Units Out	Balance	Name/Notes
08/19/01	15		15	Maria
09/06/01		12	3	John
09/25/01	25	10	18	Suzie
09/30/01			18	Anna, physically counted

< Example of inventory record >

Product Lifecycle Management (PLM)

- The process of managing the entire lifecycle of a product from its conception, through design and manufacture, to service and disposal.
- PLM integrates people, data, processes and business systems and provides a product information backbone for companies and their extended enterprise
- Goal of PLM is 'innovation'

Coverage of PLM





Thank you for your attention !