Defining & supporting Products is very challenging

Teamcenter is employed to improve the efficiency of the Product definition and support processes

A critical element of the definition is the Support Documentation. An issue is this activity is traditionally managed employing stand alone content management systems.

**Content Management** module enables Support Documentation to be managed as an integral element of the definition managed by Teamcenter

Defining the product and support documentation in a common environment results in significant benefits
Challenges

- Ensure consistent structure, format and terminology
- Managing publications for each product variant
- On critical path but dependant on engineering data flow
- Multiple sources & formats of input data
- Maximize element reuse
- Large volume of elements
- Managing approval process
- Viewing status of a manual
- Multi-channel output
- Long product lifecycle – complex history
Content Management

Description

- Content Management / Compound Documents – manage the generation and publishing of SGML/XML based information

- Applications of content management include:
  - Technical and Users Manual generation – aerospace, defense, automobile, machinery, consumer products
  - Online and off-line Parts and Product Catalogs generation
  - MRO – Logistics Support documents (e.g. maintenance or repair instructions)
  - Content Labels and Packaging – drug and CPG
  - Manufacturing Process Sheet generation

- Support for multiple language versions of components
Typical Technical Publications Lifecycle

**AUTHOR:** Create / Layout / Manage Assets

**INPUT:** Leverage Enterprise Knowledge

**PUBLISH:** Export documents for viewing

**VIEW:** Examine authored documents
Compound Documents

XML/SGML Components

- Separates content from format
  - Enforces corporate standards
  - Ease of changing look and feel
  - Moves content contribution upstream
- Facilitates content reuse
- Supports intelligent content exchange
- Structured (SGML or XML)
  - Multi-channel output - Style sheets
  - Consistent structure - Schema / DTD
  - Validation - Schema / DTD
  - Archiving in standard format

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Disconnected Input

Often 2 systems (e.g. Documentum & XMetaL)

AUTHOR: Create / Layout / Manage Assets

PUBLISH: Export documents for viewing

INPUT: Leverage Enterprise Knowledge

VIEW: Examine authored documents

Publications Content Management

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<table>
<thead>
<tr>
<th>Function</th>
<th>Publications Content Manager</th>
<th>Product Data Manager</th>
<th>Teamcenter</th>
</tr>
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<tbody>
<tr>
<td>Vaulting</td>
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<tr>
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<td>Stylesheet Mgt</td>
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</tbody>
</table>
More Robust Platform - Teamcenter functionality overlaps the specialized content management systems and Teamcenter is much more powerful in significant / key areas

Relation management
Workflow
Change management
Security – including ITAR
Configuration management

Teamcenter owns the product definition
“Decompose” document to reuse individual “components”

- Leverage Teamcenter to manage document structure
  - Configuration
  - Effectivity
  - Change mgmt

- Manage multiple configurations
  - CBOM
  - MBOM
  - Service BOM
Content Management
Multi-Channel Publishing

Authors / Subject Matter Experts
- Operating Instructions
- Repair Instructions
- Service Bulletin
- Warranty
- Recall Notices

Automated Assembly and Publishing Server

Teamcenter Repository

Multi-Format

User Manual
- Print or PDF
- Web
- CD/DVD
- Handheld

Repair Manual

Service Bulletins

Recall Notices

Multi-Lang

User Manual
- Print or PDF
- Web
- CD/DVD
- Handheld

Repair Manual

Service Bulletins

Recall Notices

Chinese

English

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Typical structure of configured product data

Product Data

Content Topics
- XML Data
- XML Data
- Graphic

Project
- Inventory
- Req'ts
- Schedule
- Location

Supplier
- Bid Info
- Mfg
- Spec.
- Tooling

Engineering
- NX
- PTC
- Mentor Graphics

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Content Management

Approach

- Build “platform” for content management (components, structure, languages, …) on Teamcenter
- Provide framework to support any SGML/XML applications
- Manage graphic components
  - Multiple formats
  - Multiple languages
- Support leading SGML/XML applications
  - Authoring (e.g., XMetaL, Arbortext Editor, XMLSpy)
  - Publishing (e.g., XSL Formatter, XPP, Arbortext Publishing Engine)
Content Management

Rich Client

**Perspectives**
(Administrator, Content)

**Query browser**

**Content preview Editor plugin (future)**

**Active work view**

**Cache view**

**Item info**
Item create/update forms
Content Management
Authoring Application Integrations

- Application centric
  - Insert menu actions
    - Save to Teamcenter
    - Query – Topics, Graphics, Used By
    - Import Graphics
    - Publish
  - Update controls – topics the user can update
- Integration at a file level
Content Management
Authoring Process

- User create/update components/topics
  - Create new topics
  - Update existing topics
  - Support Read Only / Reference – in context operation
  - Cache topics in client

- Decomposition
  - Register topics into Teamcenter
  - Support attribute exchange
  - Supports import of new documents
Composition - select the appropriate components

- Follow Document Structure
- Support attribute exchange
- XML Content from Teamcenter reports
- Graphics – format appropriate for target publication

Provide entire content to publishing application

Manage the rendition of the publication
Scenario – a user needs to replace a graphic and add text to a section of an existing document.
Graphic Management

- No restriction on the graphic format
  - Limited by the Authoring and Publishing applications
- Capture / Import Graphics
  - Manual entry
  - Document Decomposition
    - Document Import
    - User Authoring Session
Significantly Reduce Time & Cost of Creating Graphics for Technical Publications

Reduce Rework Effort with Automatic Geometry Updates

Eliminate 2D Drawings with Dynamic 3D Viewing employing common viewers
Key Functionality Overview

- Capture 3D Geometry Assets
- Author Technical Illustrations
- Advanced Editing
  - Callouts and Symbol Manager
  - Thrustline Editor
- Advanced 3D Capture
Planned Availability

- Enterprise 2005 SR1  Q3 2006
- Teamcenter 2007 SR1  Q2 2007
Content Management

Architecture

Abstract object model
- Structure templates
- Structures & contents
- XML attribute maps

XML file containing
- Model mapping
- Form specifications
- Apply customizations

Teamcenter Object Model

WEB Services (SOAP)
- Business functions
  - Compose/decompose

Teamcenter Model mapping

Teamcenter Connector

Teamcenter Extensions

Middle tier

EIS tier
Content Management
Planned Projects in 2007

- Enhance existing features
  - Thin client support - consumer
  - Usability Improvements
  - SGML Support
  - Authoring application integrations
- Support for S1000D and the CSDB
Content Management

Potential Projects in 2008

- Enhance existing features
  - Thin client support - Author
  - Usability
  - Base Functions
- Support Product Structure for content management
- Tight Integration with Teamcenter Visualization
  Publish for graphics generation
- Support DITA
- Support for ATA
Conclusion

- Complex Technical Publications led to introduction of compound documents and supporting content management systems
- Complex Product Development led to introduction of Product Data Management systems
- Issues:
  - Flow from product development to publications not well integrated
  - Major overlap in functionality of Content Mgt and PDM systems

*Introduction of Teamcenter Technical Publications provides very cost effective integrated capability*