Transforming Parts for Optimal PLM Effectiveness
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Agenda

1. About
2. Product Data Quality
   • Challenges
   • Solution and Roadmap
   • Maturity Journey of NOV
3. Solution partner CDS
We are a global family
We believe in purposeful innovation and service above all

We are the backbone of the oil and gas industry with a singular focus to deliver the finest products and services, on time and on budget, to push our customers’ business forward.
NOV Structure
What we do...

Our people deliver technologies that drive new levels of safety, efficiency and productivity

- Drilling and Intervention
- Dynamic Drilling Solutions
- WellSite Services
- IntelliServ
- Grant Prideco
- Tuboscope

Design and deliver necessary equipment for optimal performance
Solve operational challenges to optimize productivity
Vision
Wellbore Information Systems is dedicated to delivering the right technologies, the right services and the right processes at the right velocity and at the right cost. We will drive customer value through an innovative and motivated workforce that understands and cares about honoring promises, delivering results and doing the right thing.
Initial Structure – Project Black Diamond

- Classification Director
- Classification Manager
- Data Worker
- Data Worker
- Data Worker
Current Structure – Wellbore IS MDM Team

Enterprise Delivery Manager

MDM Manager

MDM Business Analyst
  - Classification Business Analyst
  - Data Steward

MDM Supervisor
  - Classification Business Analyst
  - Data Steward

MDM Supervisor
  - Classification Business Analyst
  - Data Steward

MDM Supervisor
  - Classification Business Analyst
  - Data Steward

MDM Technical Team Lead

MDM Technical Support

CDS Team

- Development
- Data Services
- Account Mgr

- Engineering
- Support & Training

MDM Technical Support

MDM Technical Support

MDM Technical Support

MDM Technical Support

MDM Technical Support

MDM Technical Support
## NOV - Product Data Quality Challenges

### Data Quality Strategy
Data Strategy was incomplete for BU’s consolidating to JDE.

- **Fragmented Data** manually replicated without common definition of framework
- **Data Quality** is managed independently with no consistency
- **Highly Manual** data quality processes with limited governance

### Mergers and Acquisitions
JDE Consolidation Strategy

- **New Acquisitions** come with their own systems and data standards
- The data need to be **normalized, classified, cleansed and de-duplicated** for integration of data into JDE and NOV applications.
- Some tools in place to **automate, manage and govern the process** but still highly dependent on manual efforts and reviews.
- Takes 3-6 months for one **consolidation** project implementation

### Maintain Product Data Classification and Attribution

- **Product Hierarchies** changes frequently due to Business restructuring.
- **Manual, difficult and expensive** methods for product classification and attribution
Case Study: NOV - Living process

- **Extract**
  - Legacy
    - SQL Server
    - Spreadsheet
  - ODI

- **Standardize and Clean**
  - EDQ - DFR process

- **Audit JDE Attributes**
  - Legacy Target Staging
  - EDQ
  - JDE Functional team to update JDE Specific data based on Audit Reports using excel plugin for EDQP
  - Audit team to perform checks like data completeness, validate values against UDCs etc.

- **Load**
  - JDE
    - Conversion Team to Load data after Audit approval
    - Base Tables
  - Siemens PLM Software TEAMCENTER

#PLMConx
Before – Data

**Duplicates**
- Acquisition like businesses
- Uncontrolled data entry

**Search Limited**
- Descriptions
- Inconsistent abbreviations

**Inconsistent Reporting Data**
- Unable to define structure to a what it is level
- Lack of Focus on categorization

**No Data Governance**
### NOV Classification process:

<table>
<thead>
<tr>
<th></th>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition of data to project</td>
<td>Excel files comparison</td>
<td>Systematic comparison</td>
</tr>
<tr>
<td>Working data by priority</td>
<td>multiple sources – loss of control</td>
<td>Single point entry</td>
</tr>
<tr>
<td>Approving data for multiple system use</td>
<td>Inability to set and keep track of multiple rules</td>
<td>Ability to set policies to assist with governance</td>
</tr>
</tbody>
</table>
NOV Highlights - Integration

- DFR
  - Teamcenter
  - EDQP Web Service
  - EDQP Automate:
    - Product Classification based on description and attributes.
    - Product Attribution from Smart Number and Description.
    - Product Data Standardization.
    - Provide Quality Index for completeness check.
    - Find and provide duplicates.
    - Provide Translated Descriptions
  - ITI Item Classification Team
  - Review
  - Maintenance
  - Business Users

- DFR Base Tables
  - Data Profiling
  - EDQ
  - Import Batch
  - Products are enriched with:
    1. Correct Category
    2. Business Attributes
    3. Technical Attributes
    4. Standard Description

- EDQ
  - Standardized JDE Description
  - Standardized and transform Business Attributes
  - Push data to JDE interface tables

- JDE ELink
  - Team Center
  - Unstandardized
  - Standardized

- eCommerce
NOV Highlight – Classification - DFR
NOV Highlight – Classification - Teamcenter

- Importing structure and parts from Teamcenter
- DFR to Teamcenter UOM mapping
- Teamcenter Id generation for exporting new structure
- Exporting PLM XML formats for both structure and parts
- Policy Manager rules to help control structure and part data to not violate Teamcenter rules
NOV Classification Technologies:

**These Technologies:**
- DFR (Design for Retrieval)
- EDQ
- EDQP
- Jira
- TeamCenter

**Enable This:**
- BI Reporting
- Mobile Aps
- Advance Supply Chain
- eCommerce
4 Classification Enabled Technology

1. B.I. Reporting
2. Mobile App – NOV Power Sections
3. Advanced Supply Chain Planning
Online Sales Portal – 24 hr sales!

Category and attribute properties in DFR drive online sales portal navigation – searching, comparing products.

DFR Categories & Attributes

DFR Data Model

https://wbt.nov.com/Default.aspx
Assisting NOV

Our Mission
Help our customers extract more value out of their enterprise systems with improved part data.

Cleanse & Normalize
Data from disparate sources (Purchased parts, MRO, design parts, etc.)

Prepare
Data for migrations: ERP, PLM, MDM, PIM

Support
Parts re-use initiatives, mitigate parts proliferation

Provide
Analytics supporting cost reductions & classification search

Providing services to
• Aerospace/Defense
• Electronics
• Automotive/Industrial
• Consumer/White Goods
• Oil/ Gas

15 Years Experience
Clean Up Your Legacy Data

Easily jump start your classification project with CDS Data Services

- Find hidden parts
- Identify duplicate parts
- Add attribute data for PLM classification
- Enter consistent descriptions
- Categorize your parts correctly

Simplifying Parts Classification

Save time and money by taking the guesswork out of parts management

Visit us in Booth #506
Thank You

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• Select “Take Survey”

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