Schlumberger Digital Forum 2022

Chevron Techlog Journey

Geolog to Techlog Migration, Techlog DELFI Deployment, and Techlog Data Integration

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Agenda

Geolog to Techlog Migration

Techlog DELFI Deployment

Expanding Techlog OC

Data Integration

Conclusion

Acknowledgment & Questions
Geolog to Techlog Migration Challenges

**Challenges**

**Knowledge**
- Rewrite apps/workflows in python and ocean, validate results
- Migrate new data types

**Global Scope**
- Standardize migration across multiple BUs globally

**Large Volume of data**
- ~1100 projects, 42.2 TB of data
- 10 months to meet cloud deployment plan

**Solutions**

**Increase Knowledge**
- Training and support by Schlumberger
- Collaboration between Chevron developers and SMEs to rewrite internal workflows in Techlog

**Proof of Concept**
- PoC to validate migration requirements
- Development of python scripts and tools

**Migration Factory**
- Collaboration between Chevron and Schlumberger to establish migration process
- Schlumberger process automation
Create use cases and test data in Geolog

Understand how apps/workflows look and work in Techlog

Rewrite apps/workflows in python and ocean and test in Techlog

Upload all files to ADO and setup pipeline to deploy apps/workflows to DELFI

Verify that apps/workflows are in DELFI and test app/workflows with SMEs

Project kickoff

Execution

Validation
Geolog to Techlog Data Migration Factory

- Techlog Data Import
  - Orchestration of Python Scripts in Techlog
    - Data Conditioning
      - Peer Review and Reports
        - Project Delivery to CVX QC Team
          - QC Passed: Project released to CVX users
            - Project Deltas
              - Merge Project into Master / New Techlog Project
          - QC Failed: Project returned to Migration Engineer for re-check & re-migration

- Deliver Exported Data to SLB
- Geolog Data Export

SLB Migration Engineer
Techlog Data Transfer from on-premises to DELFI

**On Premises**

- **Master / New Techlog Project**
  - (connected to Techlog Studio)
  - Export Deltas & Non-Well Objects

- **Techlog Studio Repositories**
  - Import Deltas
  - Import Data

**DELFI Petrotechnical Suite**

- **New Techlog Project**
  - Import Deltas
  - Import Deltas & Non-Well Objects
  - Lift & Shift Data

- **New Techlog Project**
  - Import Data

**User Techlog Project**

- Import Deltas
- (not connected to Techlog Studio)
Techlog Migration Stats

**Geolog to Techlog Migrated Projects per BU**
- Total number of projects = **1132**
- 42.4 TB

**Geolog to Techlog Migrated Workflow Files per BU**
- Total number of workflow files = **1037**

**BUs in Techlog on-prem and in DELFI**
- BUs in Techlog on Prem = **8**
- BUs in Techlog in DELFI = **13**
DEFLI Deployment & Post Migration Summary

- **Techlog Project Transfer into DELFI**
  - Identify remaining deltas
  - Migrate remaining deltas from Geolog to Techlog
  - Transfer Techlog projects to DELFI

- **Techlog Project Cleanup**
  - UWI clean up
  - Well / dataset duplicates clean up

- **Techlog Project Setup**
  - CRS Update
  - Established Well header transfer/standardization from Petrel
  - UWI validation

- **Techlog Studio Transfer**
  - Project(s) – Repository mapping
  - Well header validation
  - CRS validation
Techlog Data Integration

Data Platform

DELFI Petrotechnical Suite

Petrel Studio

Techlog Studio

Studio Sync Tool

Wells
Trajectories
Logs
Markers
Zone data

Future Liberation & Consumption

Computation Engines and Domain Services

Petrel Domain service

Liberation & Consumption

Wellbore Domain service

Liberation & Consumption

Ingestion Framework (APIs)

Domain Storage & Lineage

Domain Consumption (APIs)

Native Domain Experiences

DrillPlan
FDPlan
ExplorePlan

Future Liberation & Consumption

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Training and Support

Pre-Deployment

- Customized Techlog training classes
  - Techlog data model for all users
  - Python and Ocean for programmers
  - Advanced classes across different domains
  - Studio Techlog for users and data managers
  - Techlog hybrid courses delivered by Schlumberger and Chevron Subject Matter Experts
  - A total of 43 classes delivered globally to date

Post Deployment

- Support
  - 1-week dedicated bubble support to accompany deployment
  - Onsite support for local business units
  - Evergreen support through customer support channels

Number of Participants

- Ocean Software Development Framework: 12
- Quanti ELAN: 34
- Studio for Techlog Users: 133
- Studio Manager - Techlog: 109
- Techlog Fundamentals: 145
- Techlog Python: 55
DELFI Provides Opportunities and Value

One Common Platform

Data Openness and Integration

Influence Ongoing Development

Increase Competency with DELFI Technologies
Conclusion

Leverage Techlog in DELFI to recognize opportunities and business value:

- Leverage one common platform
- Understand data integration tools
- Increase Techlog and DELFI competencies
- Influence ongoing development

Disrupt the technology, not the business:
Employ lessons learned from previous years of Techlog evaluation and Chevron long history around deployment and value driven decisions

Use best practices:
Stay aligned with Chevron strategy and with BU needs
Leverage Scaled Agile Framework (SAFe) and be flexible: learn, investigate, validate, and adjust quickly

Acknowledge challenges:
Software migration and digital transformation present challenges:
- Continue collaboration with Schlumberger and Chevron users to enhance Techlog software and develop user OC
- Continue working with Chevron users globally to leverage decades of user experience in petrophysics interpretation software to achieve full adoption
- Embrace constant change as technologies develop and adopt
Acknowledgment & Questions

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- Subsurface Petrophysics
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- Subsurface Digital Platform
- Schlumberger
- Microsoft