ConocoPhillips

ConocoPhillips Digital Journey Starts with nxtgenG&G

John Blackburn – Geoscience Capability Lead

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Schlumberger: Todd Olsen, Mark Pollinger, Maria Perezhogina

nxtgenG&G

Long Range GGRE Digitalization Plans

NXTGENG&G

Petrel/Studio and Ecosystem Onsite

SELECTION → DESIGN → EXECUTION →

GG + RE SYSTEM INTEGRATION

Cloud Native, Delfi OSDU

SELECTION → DESIGN → EXECUTION

RE TOOLS

DELFI

2018	2019	2020	2021	2022	2023	2024

Timelines and Strategic Direction

VISION:

DELIVER A BEST-IN-CLASS GEOSCIENCE SOFTWARE ENVIRONMENT ENHANCED BY ACCESS TO RELIABLE DATA THAT PROVIDES A COMPETITIVE ADVANTAGE

STRATEGIC OBJECTIVE

Simplify geoscience ecosystem

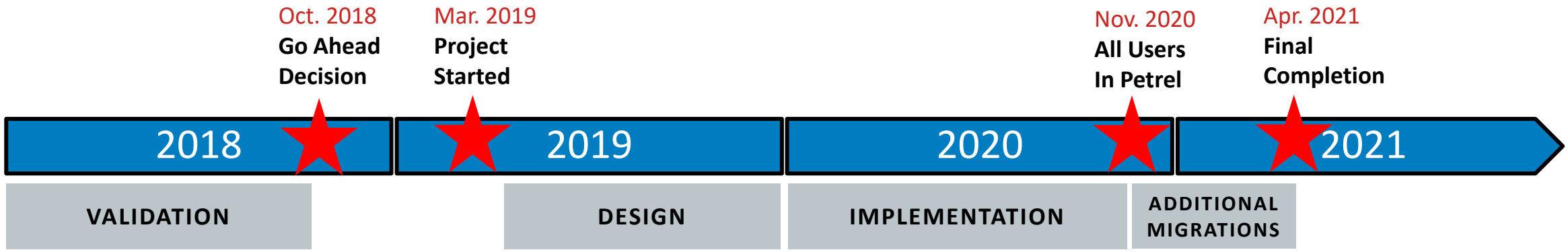
- Transform business practices
- Increase integration across workflows
- Improve data quality
- Improve data management practices

PROJECT OBJECTIVE

Transition 400 Geoscientists to Petrel
Migrate 29 business groups
By end of 2020

FACILITATION

Strategic partnership with Schlumberger:
Alignment at all levels



nxtgenG&G Program

VISION:

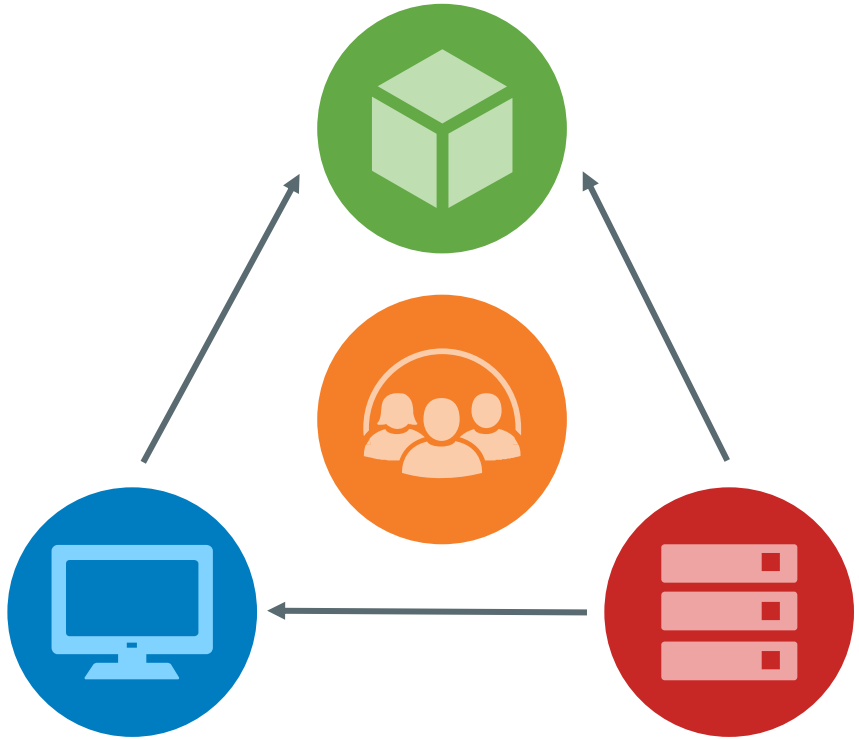
DELIVER A BEST-IN-CLASS GEOSCIENCE SOFTWARE ENVIRONMENT ENHANCED BY ACCESS TO RELIABLE DATA THAT PROVIDES A COMPETITIVE ADVANTAGE

SOFTWARE & WORKFLOWS

- All staff on Petrel by year-end 2020
- Simplified, integrated tool set, including Petrel and other software

PLATFORM

- Defining an optimized compute environment for Petrel
- Virtual workstations facilitate 'Work Anywhere' capabilities
- Based on Windows



DATA

- **Rigorous data clean-up**
  Data quality improvement
  Data discovery
- **Standards**
  Coordinate reference systems Meta data tags
- **Behavioral Change**
  Implement data governance

PEOPLE

- Training
- Global support system
- Global standardization

PROGRAM

- Enabled by globally funded effort to migrate the geoscience community
- Sustained by global, long-term support model

Integrated Global Project

NXTGENG&G GLOBAL STEERING TEAM
Sponsors: 3 ConocoPhillips executives, *1 Schlumberger executive*
Program Owners: GGRE Decision Board

IMPLEMENTATION LEADERSHIP
Product Owner: John Blackburn
IT Portfolio Manager

CONOCOPHILLIPS LEADERSHIP
32 Business
7 IT
3 Schlumberger

SCHLUMBERGER SPONSORS
2 SLB HQ Managers

CORE DELIVERY TEAM
25 ConocoPhillips
13 Schlumberger
42 Other contractors

SCHLUMBERGER GLOBAL SUPPORT
23 Training
14 Mentors
21 Core and support team

ConocoPhillips

Key Components to a Sustainable Data Ecosystem

- Data Governance
- Knowledge Capture and Data Management
- Log Harmonization

Global Alignment on Geodata Management

Change from Passive data management to ACTIVE data management

Set expectations, enforce rules

Managers — *Set expectations on enforcement of Standards and Procedures*

Supervisors — *Ensure expectations are met:*
- *Nominate gatekeepers*
- *Review Studio monitor reports*

Studio Managers *IT* — *Manage and monitor Studio access, data and interpretations*

Manage database

Gatekeepers *Business Unit* — *Conduct review if interpretations and promote though process in Studio*

Data Loaders *IT/Business Unit* — *Load wells and seismic **data** as per procedures*

End Users *Business Unit* — *Share, publish **interpretations** To Studio as per procedure*

Knowledge capture

Knowledge Capture and Data Management

Objectives:

- Ensure foundational data is not changed
- Improve data discovery
- Enhance data quality over time
- Keep Studio repository clean

CULTURE CHANGE

Geoscientists take ownership of:

- Capturing critical data
- Interpretation quality

IT own foundational data quality

THREE QUALITY ATTRIBUTES REQUIRED FOR ALL STUDIO DATA:

Quality Attribute	Global Tag	Description	Auto-delete	Write
1. Project	Asset/Area	AOI		
2. Data Origin *(Confidence)*	Internal	COP generated		
	External	Other Co./Public Data		
	Restricted	Restricted use data		
	Legacy	Unknown origin		
	JV	Joint Venture owned		
	JIP	Joint Industry Project owned		
3. Data Status	Temporary	Short term share	30 days	All
	In Progress	Multi-interpreter working	90 days	All
	Locked	Single interpreter working	90 days	All
	For Approval	Flags Gatekeeper	no	All
	Approved	Ready to promote	no	Gatekeeper
	COP*	Best available data	no	Studio manager

Global Well Log Standardization

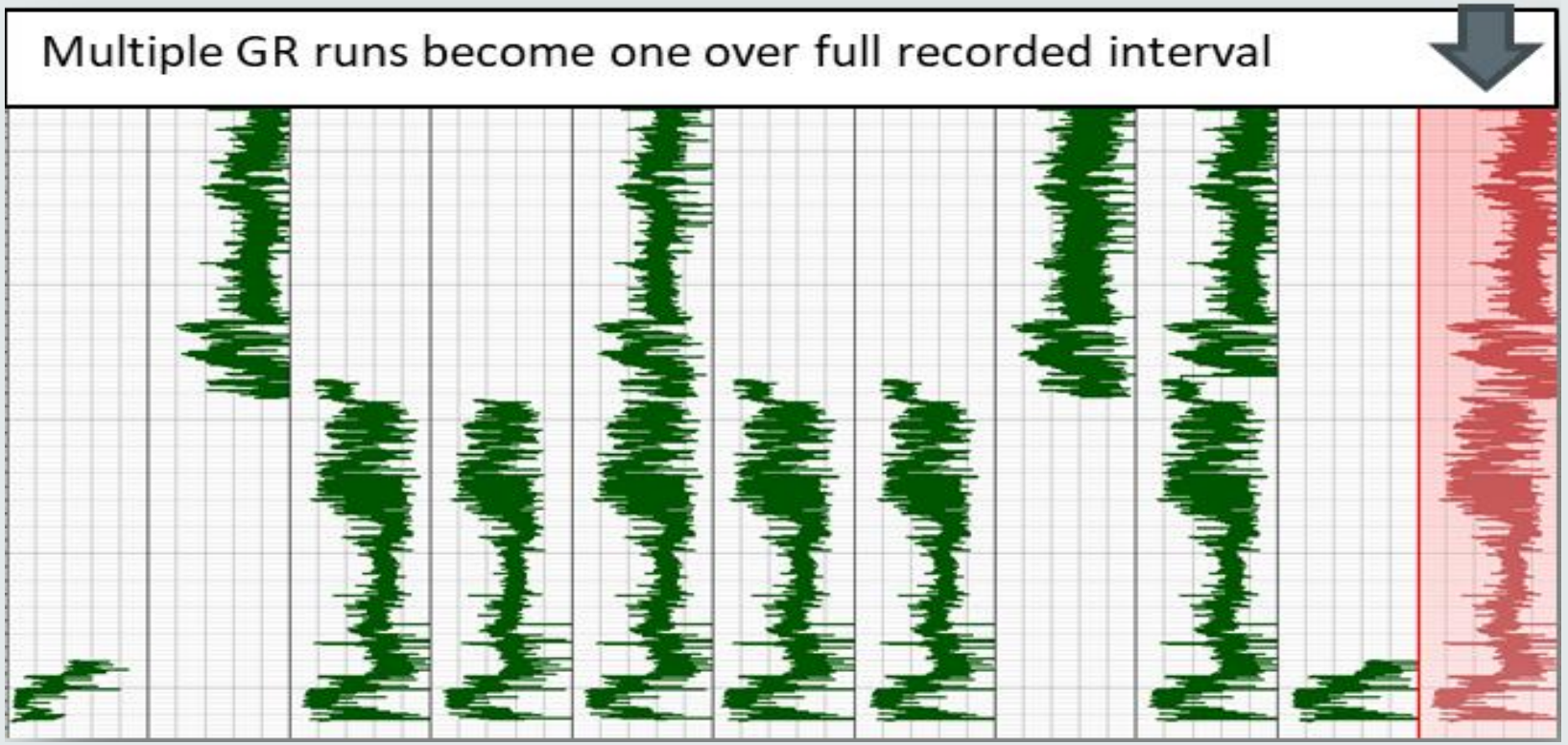
Challenge

- Global well logs in all Petrel projects
- Log aliasing in Petrel
- Log quality
- Data consistency

Advantages

- Saves time creating log alias
- View all of valid data available
- Standard team displays
- Easy to transfer scripts around globe
- Consistency – team use the same data
- Ready for global analytics

CREATING 'AUTO' LOGS



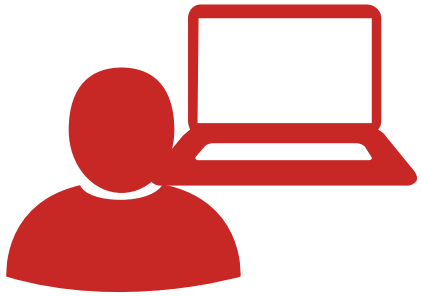
Standardized log names

- Prefix AUTO or GOLD
- 49 Global standard log names

Challenges During The Project

EXTERNAL

COVID-19 PANDEMIC



TRANSITION TO REMOTE LEARNING

INTERNAL

MID-PROJECT SCOPE CHANGE

GLOBAL SUPPORT & GOVERNANCE

Long Range GGRE Digitalization Plans