Field operations to economics: fine-grained decision making

PetroKazakhstan Inc. & Schlumberger
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Content

- PKI group
- Project overview
- How it was before
- Current solution
- OFM-PEEP link
- Examples
- Executive summary
PKI group

PKI operations are located in South Turgai basin in south central Kazakhstan.
- 15 Production Contracts
- 5 Exploration Contracts
- 2 JVs
- 2 Joint agreements

PKI shareholders

CNPC
China National Petroleum Corporation

KMG
KazMunaiGas Exploration & Production JSC
Project overview

Objective: **Integration of Fields, Kyzylorda and Almaty offices**

Integrate three remote locations of company’s different departments into one working environment:

1. Field Operation – Fields
2. Engineering - City side office (Kyzylorda office)
3. Economics – Corporate office (Almaty) office
Economist’s duties

1. Current projects monitoring: well level economics calculation, analyze performance, suggest recommendations.

2. New projects evaluations: well level economics calculation, determine Brake Even Point (BEP), approve or suggest corrections.

3. Consolidated evaluations: calculating remaining value of company’s assets.

Field 1
Field 2
Back allocation
MER
Field 1
Field 2
Forecast
Analytics
Forecasts at field level
3-5 days
Production Balance, Well test, etc
Daily data loading
Forecasts at field level
Analytics
Merak
3-5 days

Architecture – past practice
Weaknesses of the existed workflow

1. Data exchange via email
2. Additional job needs to be done by engineers to prepare data for economists
3. Economists need to reformat engineers data to prepare for use
4. Extensive amount of manual work involved
5. Separate database for each oilfield
Architecture – adopted solution

Field

Production Balance, Well test, etc

Avocet

Daily data loading

Kyzylorda

Back allocation

OFM

Master Project

Analytics MER Forecast

< 1 day

Forecast at well level

Almaty

Merkak

Schlumberger-Petroleum Kazakhstan
Direct automated OFM-PEEP linking
Advantages of the new workflow

1. Single space where production forecast data is stored
2. Engineers do only their job – additional work is not required
3. Economists get production forecasts directly in Merak – formatting is not required
4. Single database for all oilfields
Economical analysis Merak: PEEP

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Economical analysis in Merak: BEP

**BEP** – define the minimum required production rate for a new drilling well.
- calculating for each oil field
- to cover investments related to drilling well (drilling and infrastructure)
Economical analysis in Merak: Project analysis
Executive Summary

This project allowed:

1. Eliminate manual work and related human factor
2. Decrease time for expenditure authorizations from 4 days to < 1 day
3. Save additional time for deep economic analysis at well level
4. Speed up overall budget planning process
5. Make a well-by-well decision
Thank you!
Questions?