skkmigas

Digital Transformation: A Fourth Industrial Revolution in Indonesia's Upstream Data Management

19 Sep 2019

SATUAN KERJA KHUSUS
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Agenda

- Introduction
- Background & Challenges
- Methodology
- Key Success Factors
- Values and Benefits

Introduction

SKK Migas

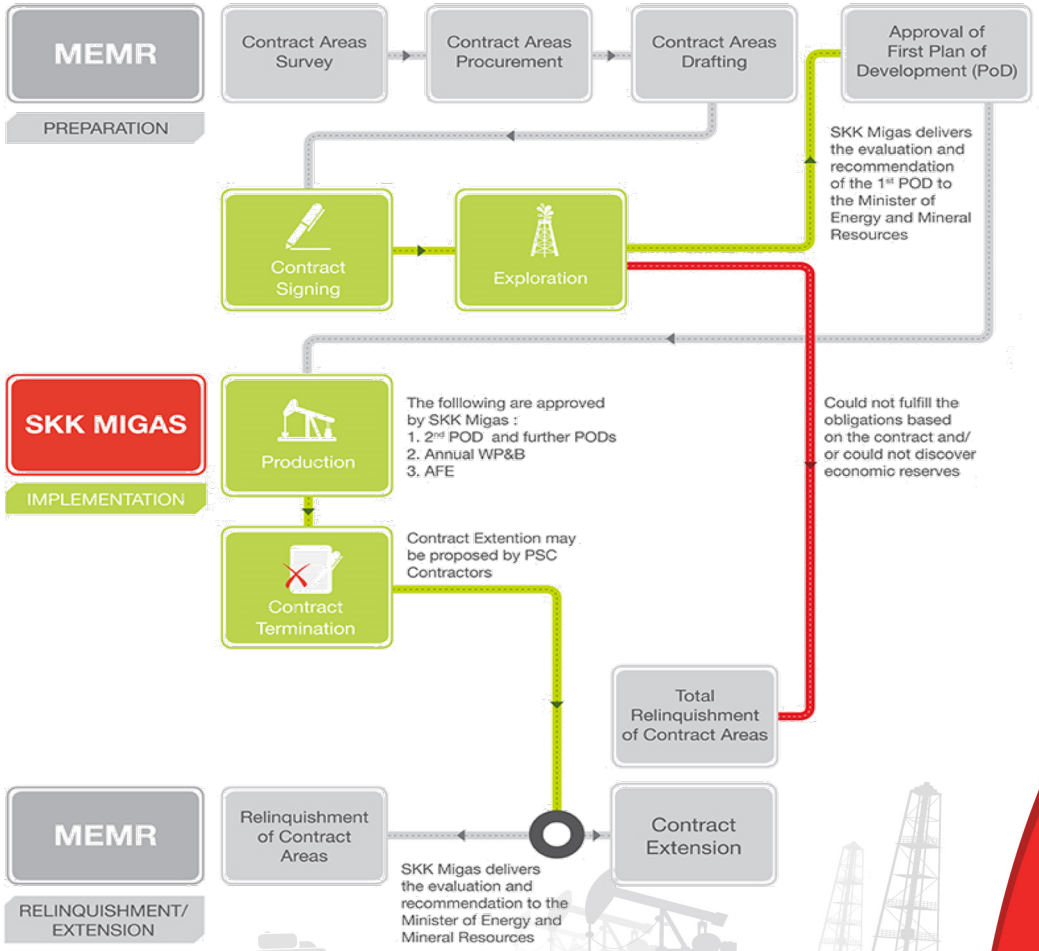
Supervise the upstream oil and gas activities in Indonesia

211 PSC blocks

~900 fields

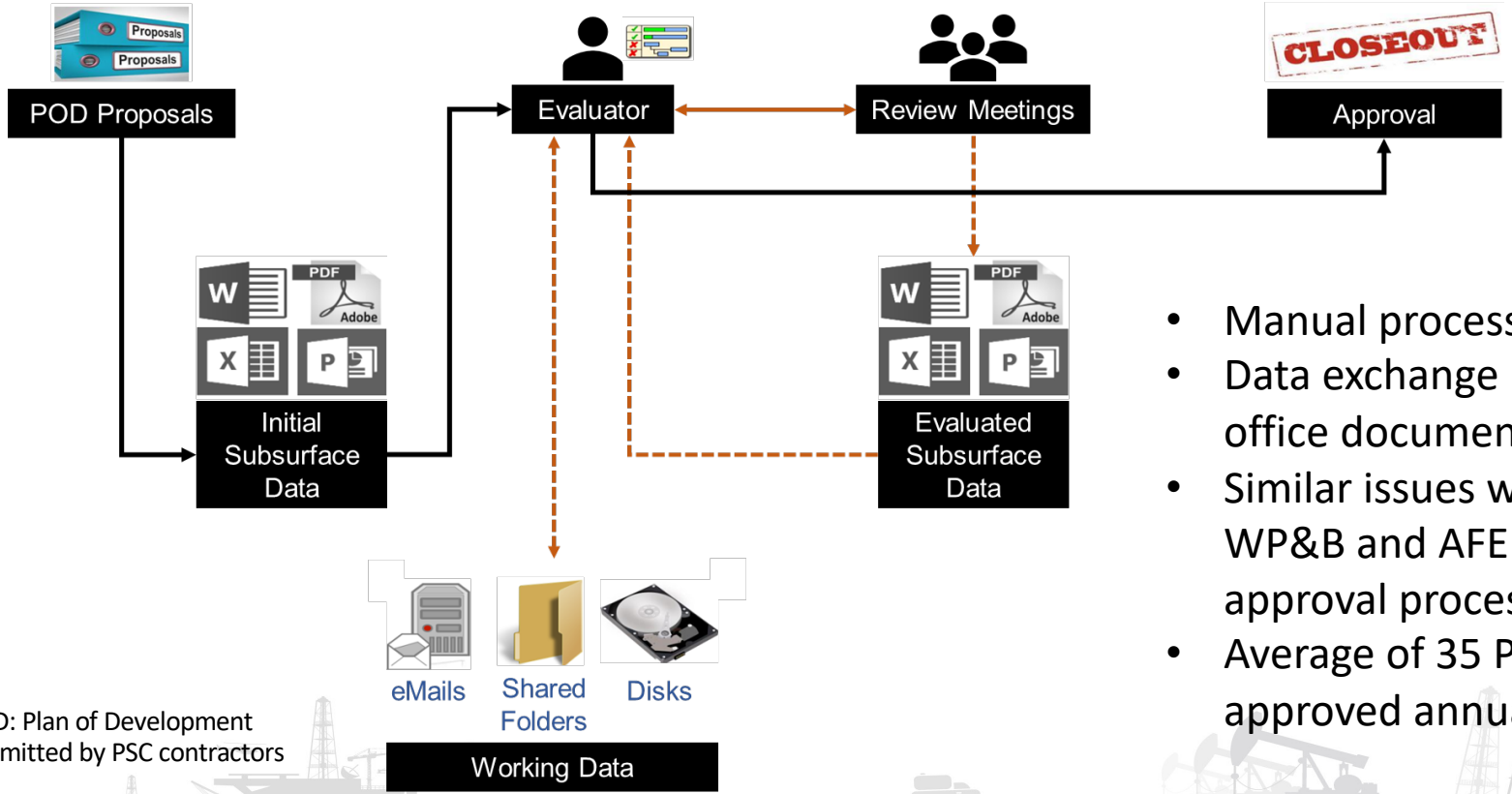
2 MBOEPD target

$14.7B annual budget



*MEMR: Ministry of Energy and Mineral Resources

Background



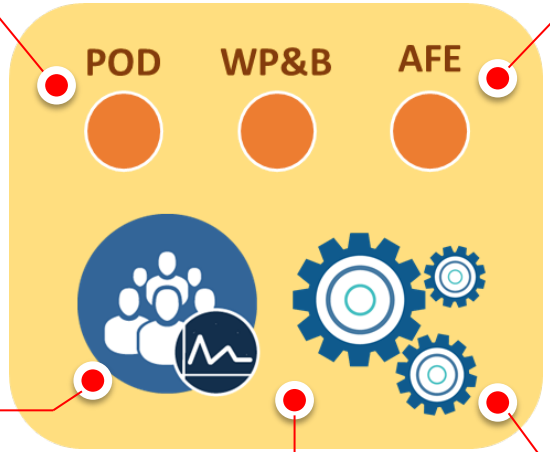
- Manual processes
- Data exchange uses office documents
- Similar issues with WP&B and AFE approval processes
- Average of 35 POD approved annually

POD: Plan of Development submitted by PSC contractors

Challenges

Data Availability & Quality

Magnitude of Data



Data Format

Manual Data Collection

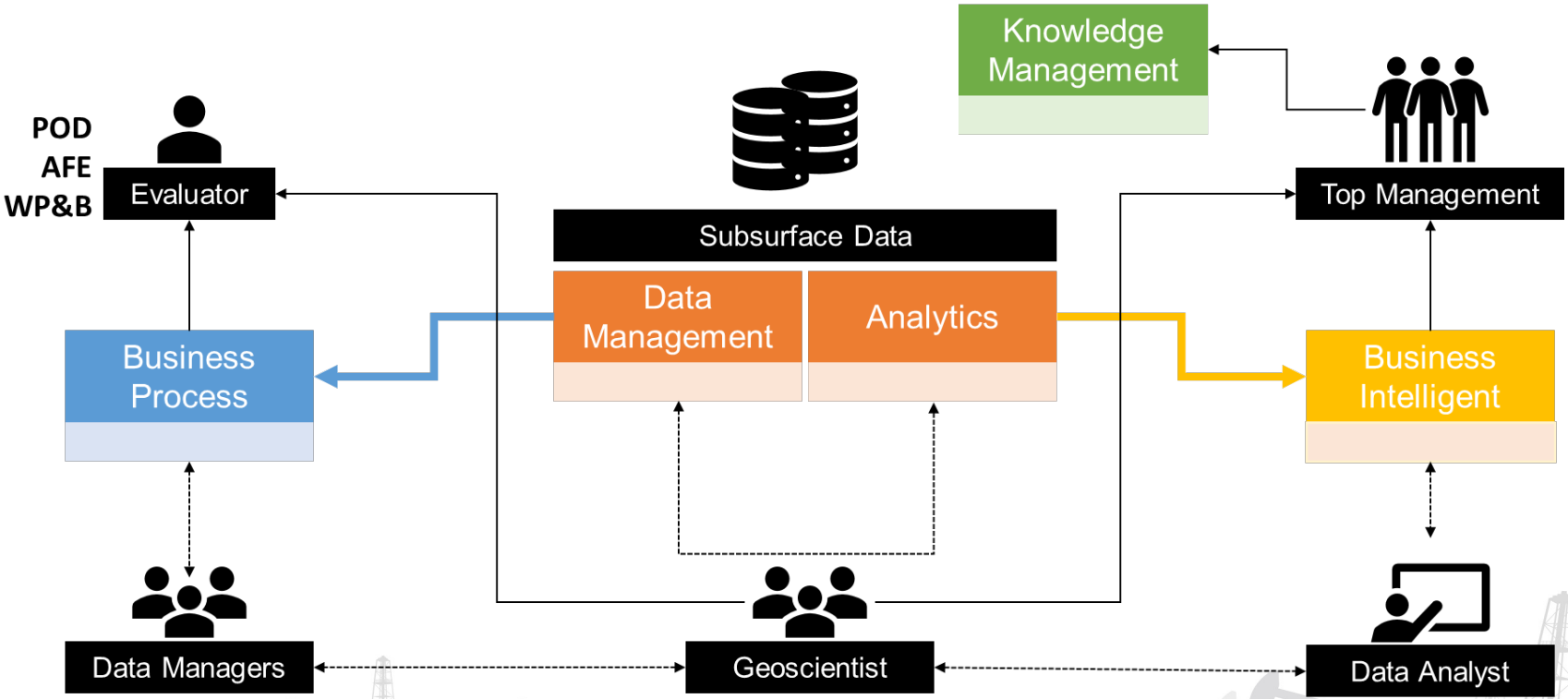
Nomenclature

SDMS Vision

Subsurface Data Management System (SDMS)

Integrated, reliable, up to date, and easily accessible data management system that supports analytical process which then generates knowledge to support fast and efficient decision making hence managing the oil and gas natural resource more effectively

SDMS Vision


Knowledge Management
POD
AFE
WP&B
Evaluator
Subsurface Data
Top Management
Data Management
Analytics
Business Process
Business Intelligent
Data Managers
Geoscientist
Data Analyst

Five Years Plan

2016

- Data Collection
- Pilot Project

2017

- System deployment
- Continous data collection & loading
- Pilot for external data access

2018

- Define scope for online business processes
- Launch of GGR Café – PSC collaboration room
- Open for investor data browsing
- Continous data loading

2019

- Ministry decree on open data access for oil & gas
- Start deployment of online business processes
- Define scope for advanced analytics
- Complete basic data loading

2020

- Launch online data submission
- Start deployment of data analytics initiatives
- Integration with data from the ministry

Data Volumes Overview

WORKING AREA

194 Total PSC Blocks in SDMS

WELLS

42,630 Wells

1506 Fields

SEISMIC 2D

1826 Surveys

39,422 Lines

SEISMIC 3D

348 Surveys

Deviation Surveys

45,512 Records

25,611 Wells

Checkshots

2,311 Records

Markers

725,301 Records

23,457 Wells

Well Logs

909,897 Well Log Curves

21,736 Wells

DOCUMENTS / FILES

213,011 Files

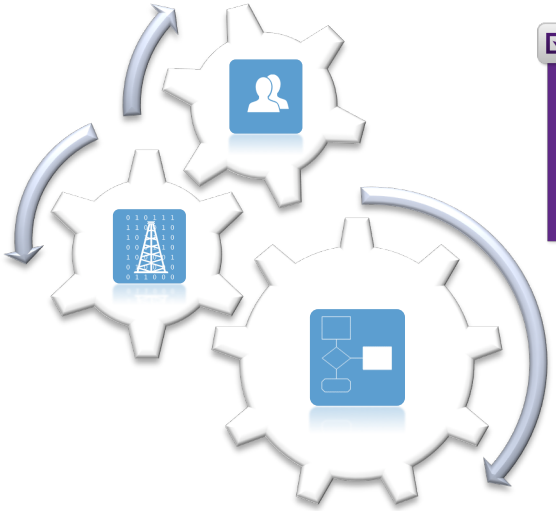
65 Document Types

39,140	Well Log Related Files
87,584	(Other File Types)
11,198	Velocity
23,699	Drilling and Completion
17,500	Well Testing
4,773	Petrography
105,799	Seismic Related Files
4,759	SCAL / RCAL
1,074	Core
3,479	Biostratigraphy
1,244	Horizon
2,980	Geological Model
1,219	Geological Marker
1,846	Geochemistry

Key Success Factors

Technology

Leading edge, certified and proven, flexible models and infrastructure



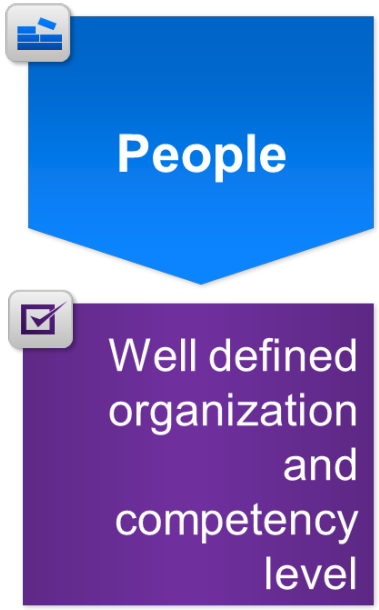
People

Well defined organization and competency level

Process

Workflows derived from business processes

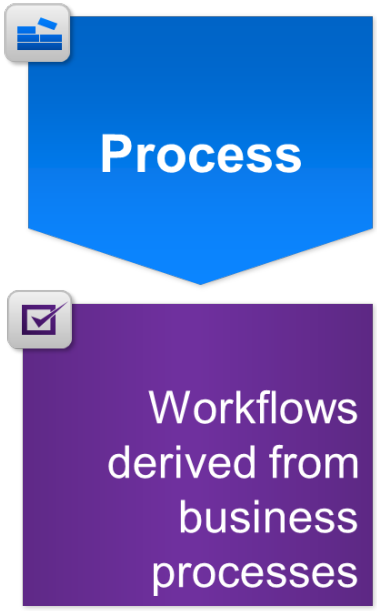
People as the key component



+ **Organizational Readiness**
  availability and commitment of resources

+ **Technology Mastery**
  transfer of technology and best practices to sustain the operation

Supporting the business processes



+ **Requirements Assessment**
  collect business cases and technical requirements

+ **Governance Setup**
  document the standards, policies, and procedures for data operation

+ **Continues Improvements**
  perform reviews and recommendations

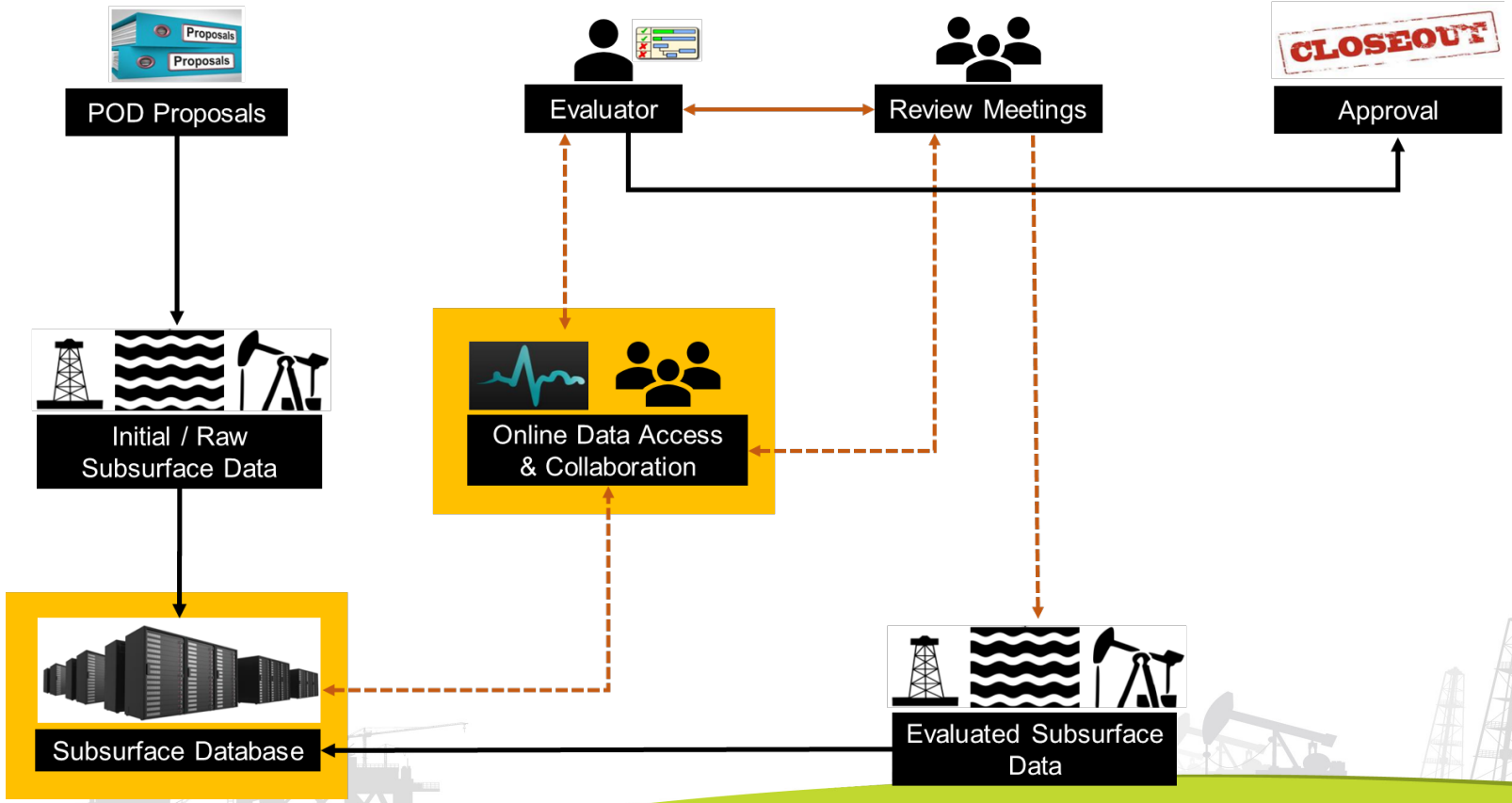
With technology as the enabler

Leading edge, certified and proven, flexible models and infrastructure

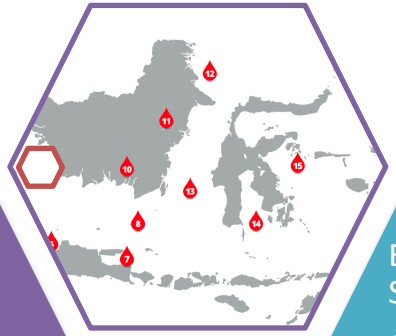
+ **IT Infrastructure**
  ensure sufficient support from the IT enabler components to sustain the operation

+ **System Application**
  deploy a robust system to contain all data & workflows and deliver values to all stakeholders

Workflow Transformation



Way Forward: Data Analytics Ambitions



Production Forecast Tool

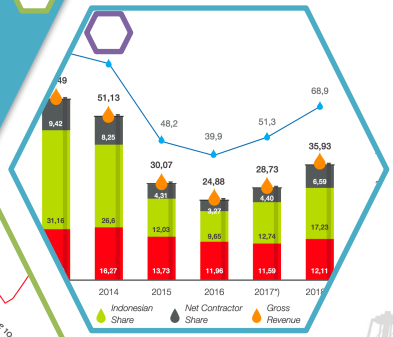
- Top-down model production profile
- Reserves and economics prediction

Automated Interpretation

- Auto-generate 3D maps from log & seismic data in SDMS

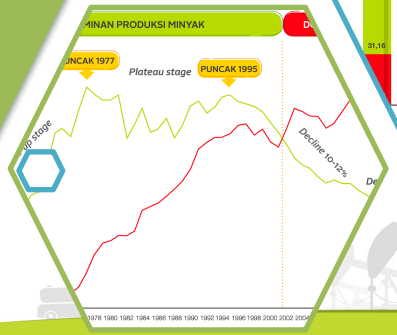
EOR Candidate Selection

- Screen EOR candidates using analogs from public data



Asset Portfolio Management

- Production vs Cost Optimization
- Cost impact analysis



Values & Benefits

+ Easy access to higher **quality and reliable information** – finding data in a matter of seconds

+ **Promote oil & gas potential to investors** – discussions with investors is more effective, facilitated with availability of data

+ **Higher degree of collaboration** between SKK Migas and PSC contractors – reduce delays caused by manual exchange of data

+ **Foundation for data driven innovations** – ready to adopt advanced data analytics based workflows

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TERIMA KASIH
THANK YOU