



## **PPDM Data Management Conference**

**Date:** 9<sup>th</sup> – 10<sup>th</sup> September, 2010

**Location:** Perth, Western Australia

## **PPDM for Asset Management**

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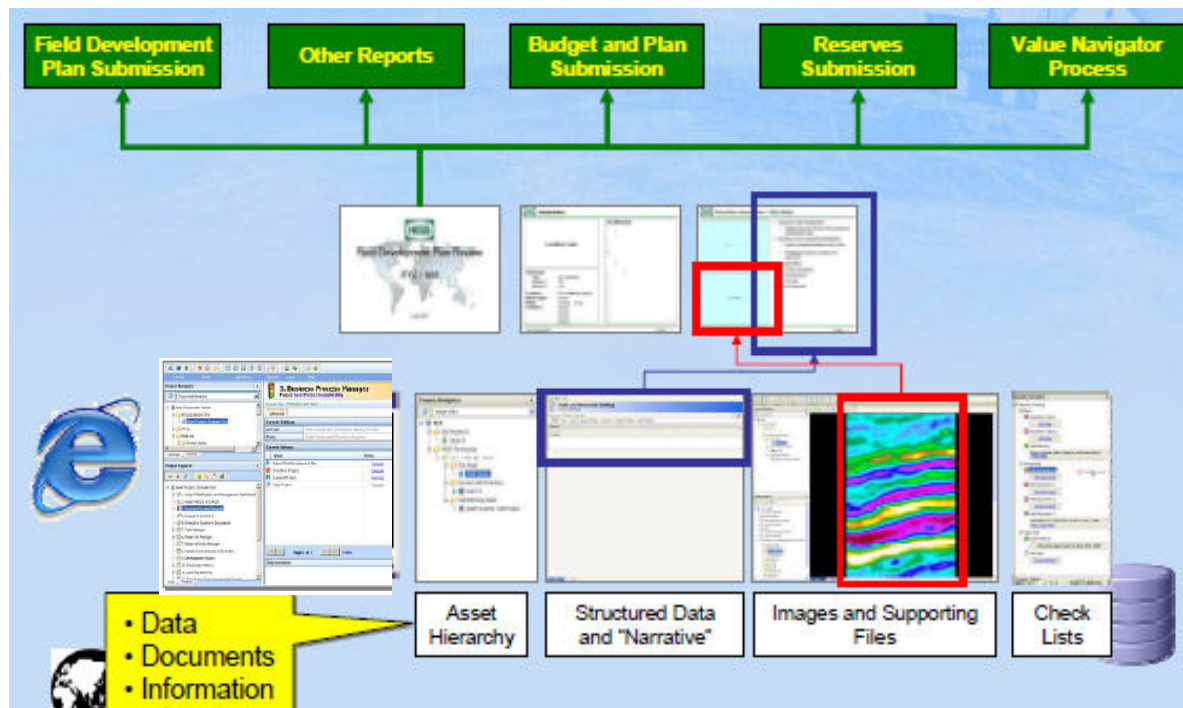
# Why a back-end database to enable workflows?

## *Drivers:*

*Standardized Processes*  
*Audit Trails*  
*Increased Streamlining*  
*Reusability and Efficiency*  
*Avoid Duplication of Effort*

## *Enablers:*

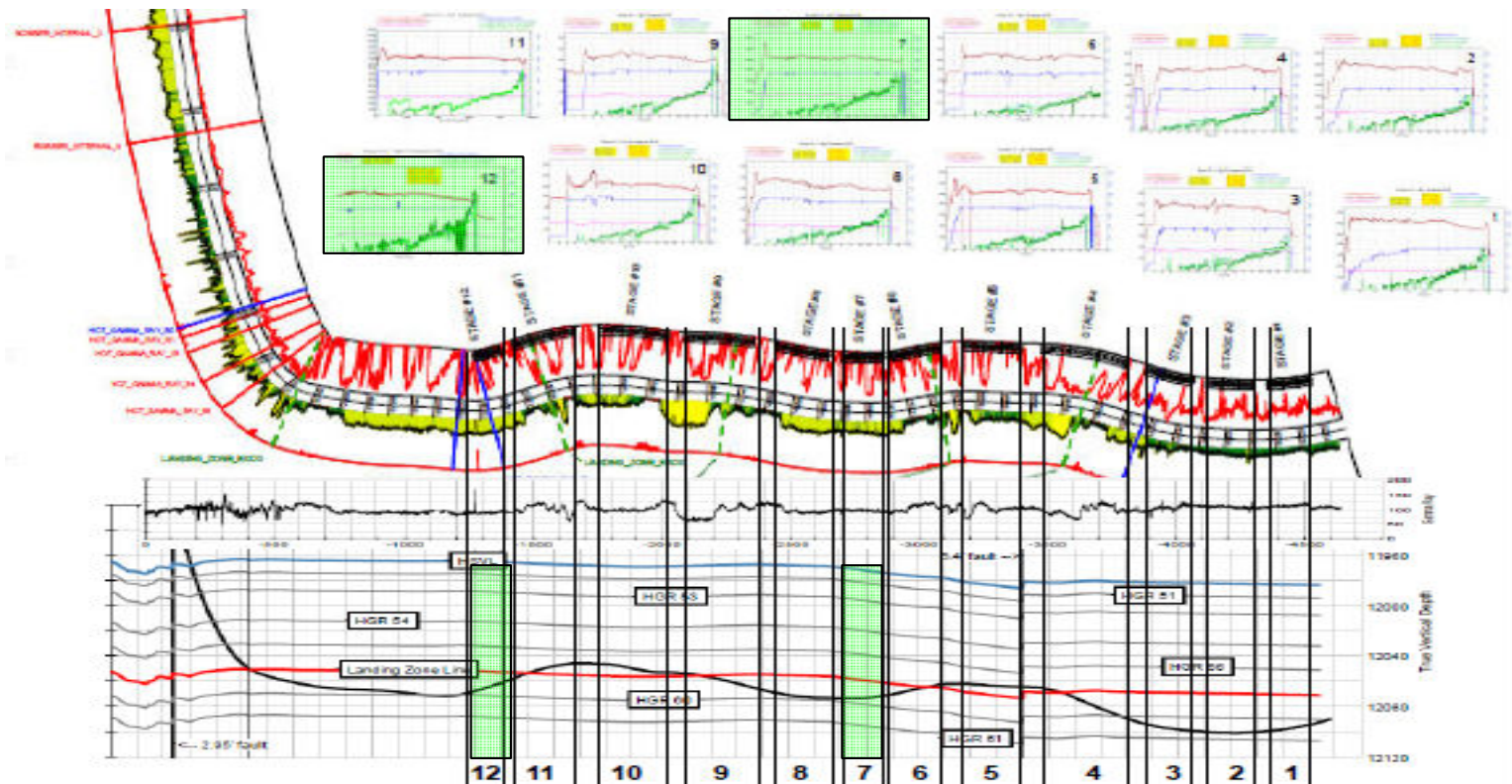
*Standardized Data Model*  
*Role-Based Portal Access*  
*Shared Business Processes*



*One Solution: The Asset Management Portal*

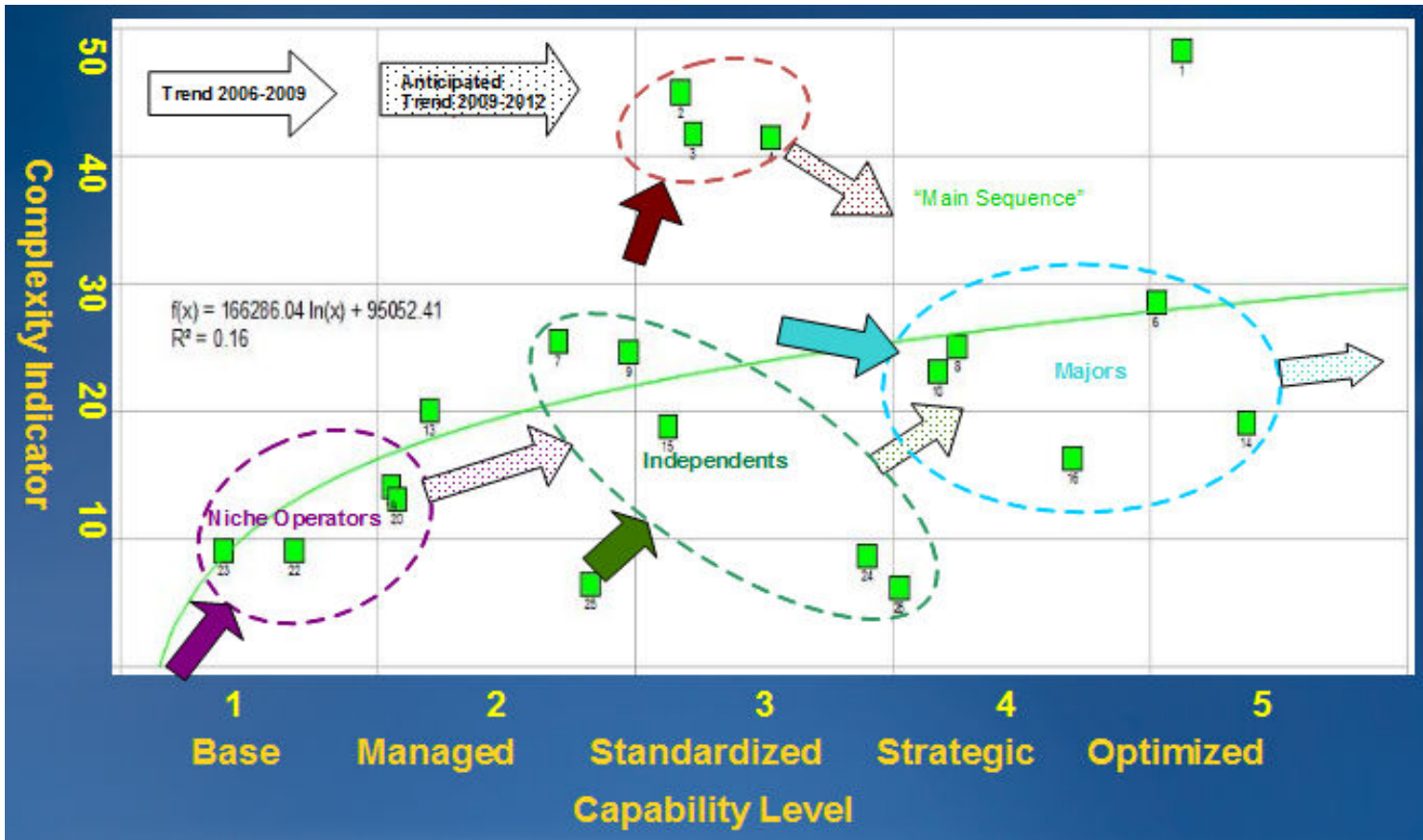
# Unconventional Gas – Data Management Drivers

- 1) *Growth through Mergers and Acquisitions*
- 2) *Focus on Operational Expenditure*
- 3) *Real-Time data from long reach horizontal wells*
- 4) *Locations under-served by major software suppliers*
- 5) *Lean data management staff*
- 6) *New data types: True Stratigraphic Position, Water Resources*



# Unique Data Management Challenges

- 1) *Unstructured Data on Shared Drives*
- 2) *Interoperability of Legacy Applications*
- 3) *Nascent GIS Capabilities*
- 4) *Rig-Centric Workflows*
- 5) *Integration of Completions and Stratigraphic Information*



# The Problem

## Workflows:

Planning/Budget

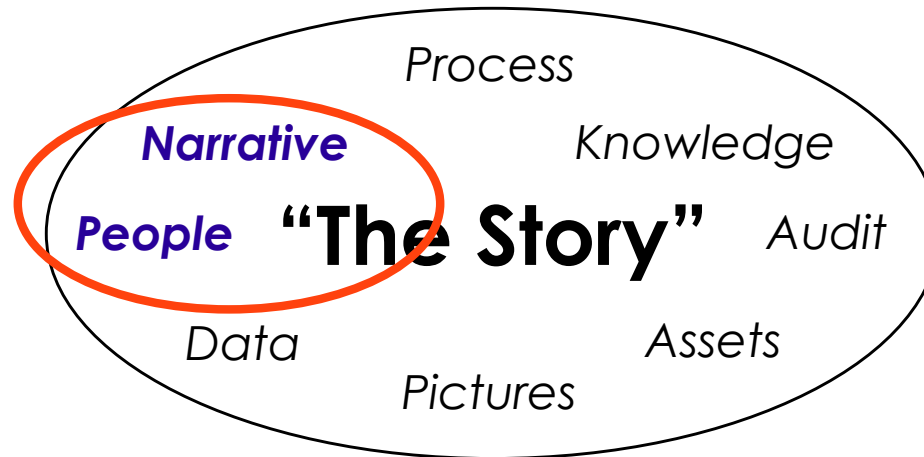
EOY Reserves

Capital Review

Peer Review

Asset management

## Components:



## Information:



Corporate and Master Data Management

# How do Clients Describe the Problem?

## Case Study #1

**Nobody could find anything**

**Constant demand for the same information**

**No “record” of what was used to support an AFE**

**Management had no “line of sight”**

**Technical services had no “line of sight”**

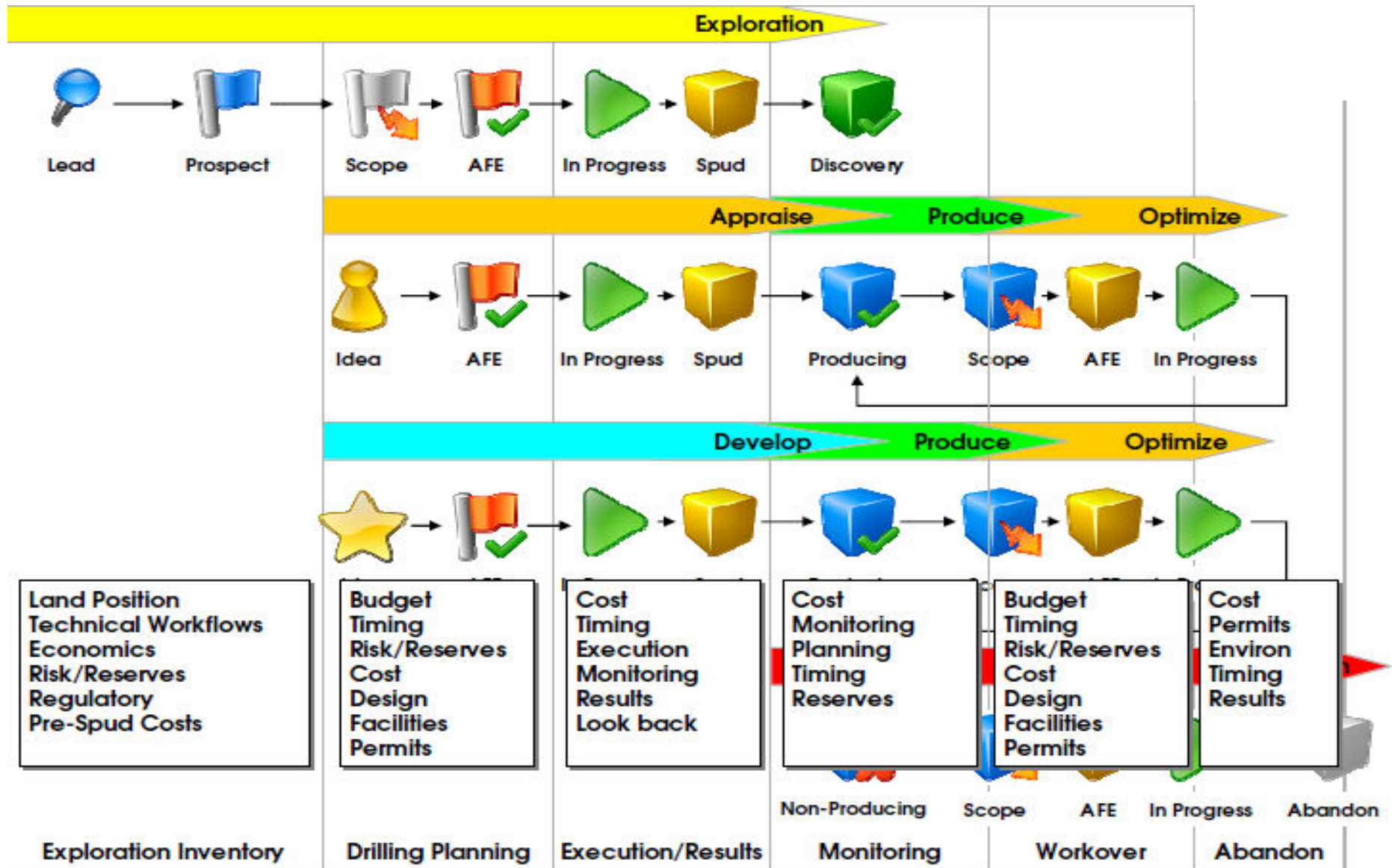
**Drilling disconnected from planning process**

**No way to capture ideas from the beginning**

**Lost knowledge of behind pipe opportunities**

**No standards to meet management needs**

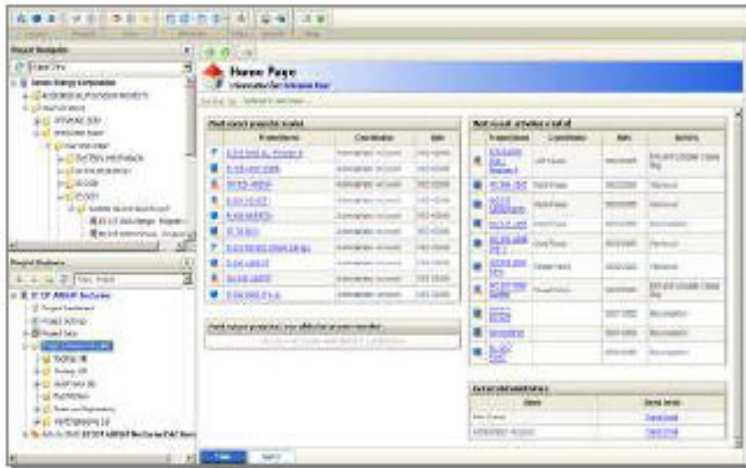
# The Process: Case Study #1



# The Solution: Case Study #1

The Asset:  
The Portfolio:  
The Process:

The Well  
GOM Shelf  
Drilling & Well Work Planning



***“Line of Sight” between Drilling & Planning***

***Capture lost knowledge from behind pipe opportunities***

***“Workflow and Document Management Wrapper” around PPDM***

***Enforce standards***



# How do Clients Describe the Problem?

## BP Blocker Field

**Tight gas play**

**No standards for data in Petra and Geolog databases**

**No audit trail for interpretation workflows**

**Lack of consistency across multiple interpretations**

**Previous reserves workflows undocumented**

**Results of previous field studies never captured**

**Organizational knowledge lost**

**No repository for technically validated data**

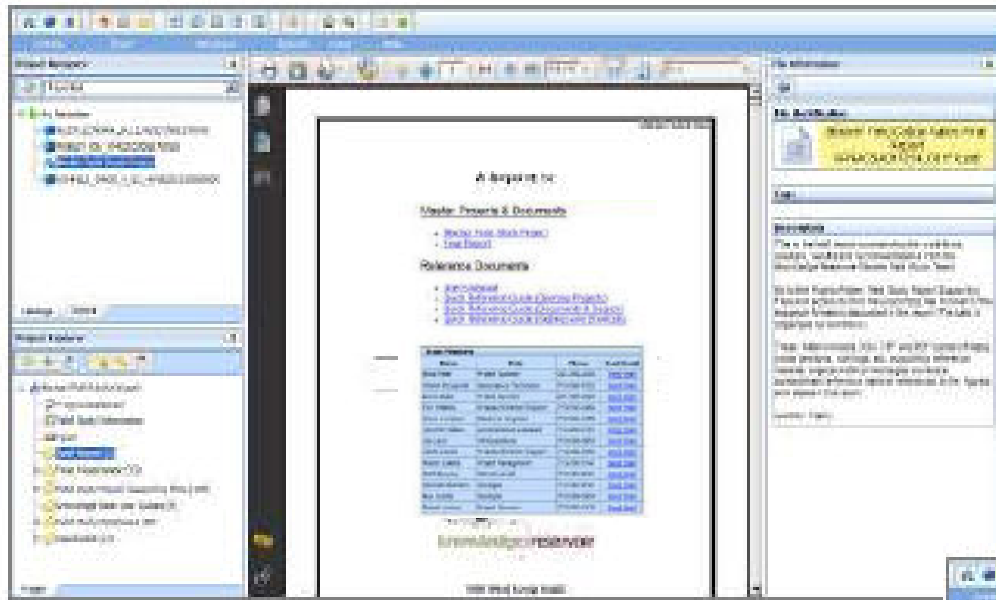
**No record of data supporting field management decisions**

**Multiple versions of the same information**

# The Solution: BP Blocker Field

The Asset:  
The Portfolio:  
The Process:

The Field  
Blocker Field, East Texas  
Volumetrics and Reserves

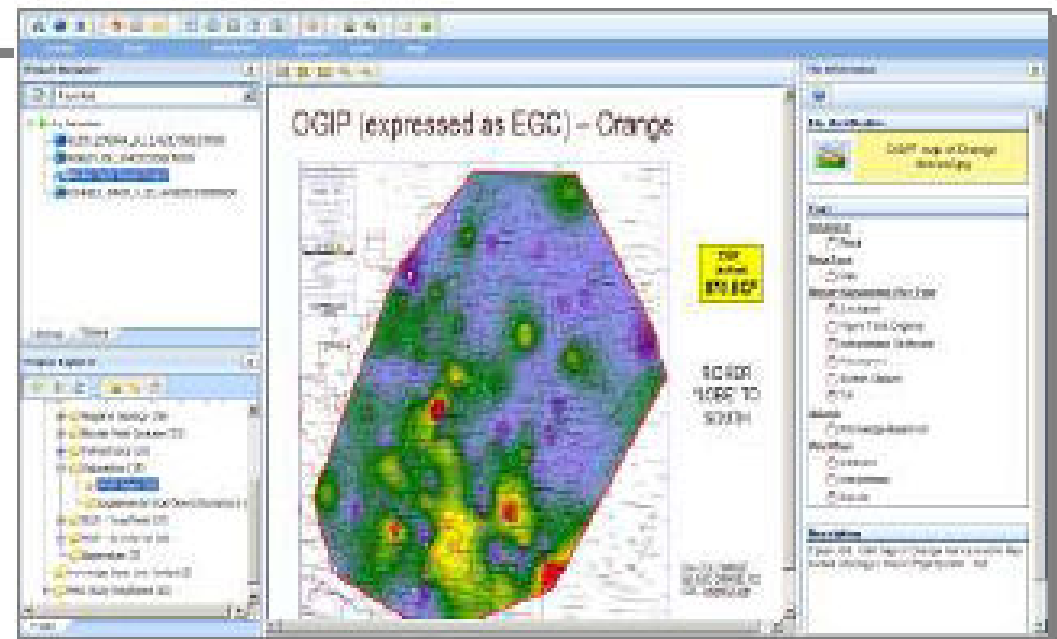


*Searches by  
organizational hierarchy*

*Filter by data elements  
used in the workflows*

*PPDM back end and  
workflow application*

*Inventory and delivery of  
field study results*



# The Solution: BP Blocker Field

The Asset:  
The Portfolio:  
The Process:

The Field  
Blocker Field, East Texas  
Volumetrics and Reserves

**Links to team personnel**

**Search and filter by use in workflow**

Project	Type	Category	Size
ND Cross plot example neutron normalization B...	.tif	Processing and Editing	1.85 MB
Log_Name_Conventions.xls	.xls	Supplemental Workflow Information	19.44 KB
Composite plot show intra taylor washout alle...	.tif	Processing and Editing	644.25 KB
Computed log plot for buckles quality WARE G...	.tif	Reservoir Quality Analysis	846.61 KB
blocker_basemap.pdf	.pdf	Base Map	558.64 KB
Histogram regional core porosity.tif	.tif	Reservoir Property Analysis	876.94 KB
Composite log plot showing calculated porosit...	.tif	Reservoir Property Analysis	792.19 KB
PWELL results Facimage per			0.00 MB
ND crossplot for core descri			8.29 KB
Core porosity compaction co			4.80 KB
Composite log showing Mass			78.00 KB
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dology.ZIP	.ZIP	Supplemental Workflow Information	13.93 KB
ty for four wells.tif	.tif	Reservoir Property Analysis	866.94 KB
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redicted versus ...	.tif		
re lithofacies and...	.tif		
compositelogplots.zip	.zip		
Computed LAS files.zip	.zip		
Pickett Plot water saturation george A and B ...	.tif		

**File Information**

**File Identification**

Histogram of core grain density for four wells.tif

**Tags**

**Database**

- Geolog

**Data Type**

- Core
- Histogram

**Report Supporting File Type**

- Figure Table Original
- Interpretation Software
- Screen Capture

**Source**

- Knowledge Reservoir

**Workflow**

- Analysis
- Database
- Interpretation

**Description**

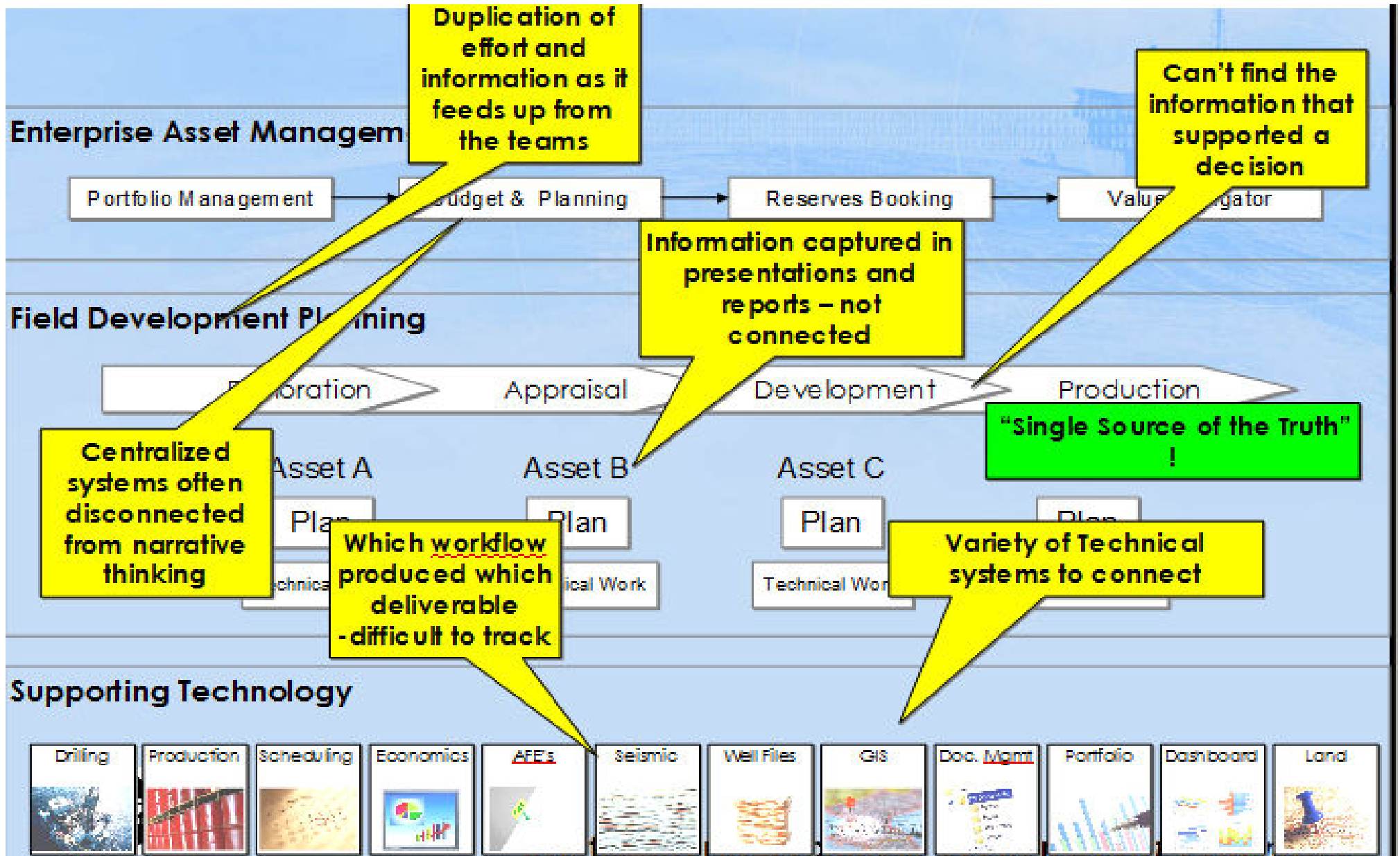
Figure 85 : Histogram of core grain density for four area wells (Author Keith Byerley (Petrophysics))  
Report Page Number : 102

# How do Clients Describe the Problem?

## HESS

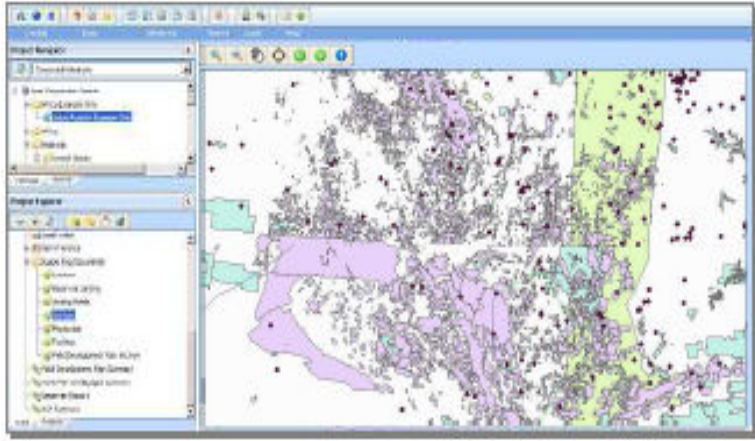
- No single source of the truth for field development plans**
- Inefficiency in documenting plans in asset teams**
- Duplication of effort in providing information to management**
- No easy way to share knowledge between assets**
- No repository for the life of field story over time**
- Multiple data versions duplicated in multiple storage locations**
- No way to bring new people up to speed quickly**
- Inconsistencies in development plans over time**
- No line of sight for management**
- Business systems disconnected from geotechnical decisions**

# The Process: HESS

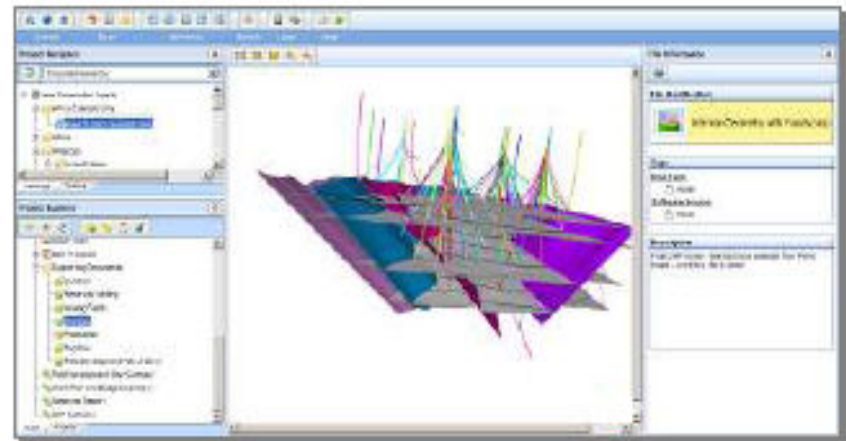


# The Solution: HESS

The Asset: Fields and Field Groups  
The Portfolio: Global  
The Process: Field Development & Budget



*Summarize, report, aggregate and collate*

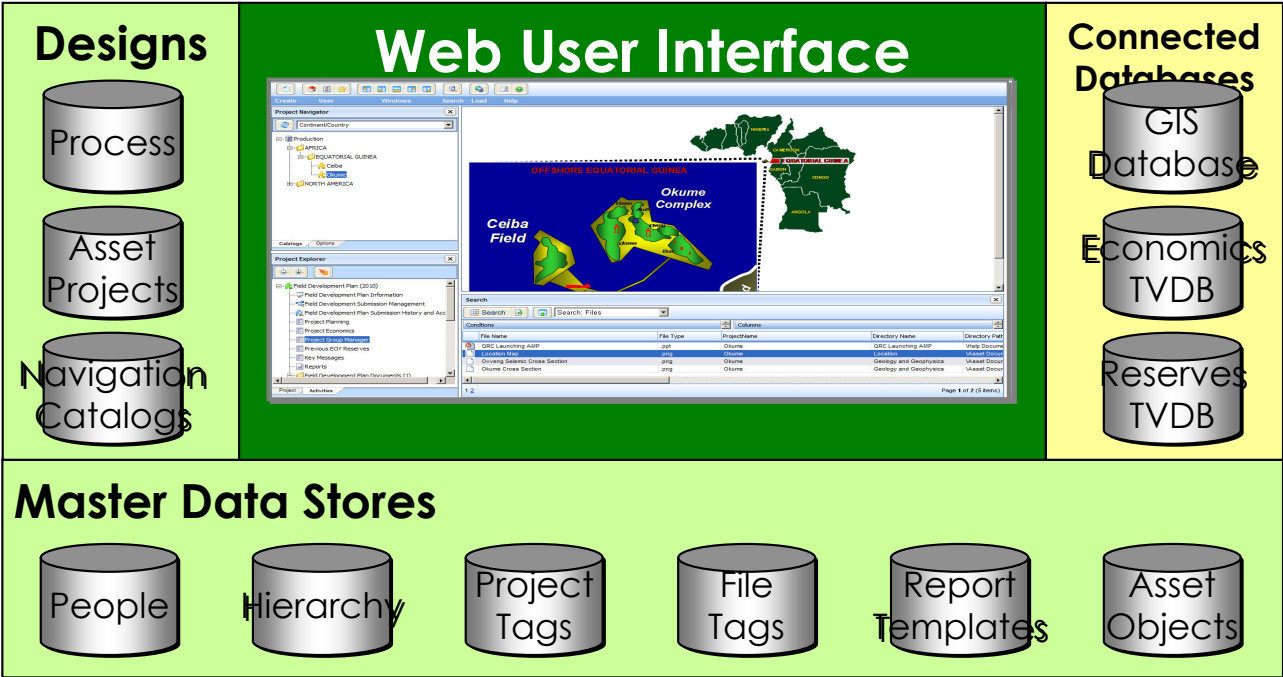


*Leverage existing PPDM investment*



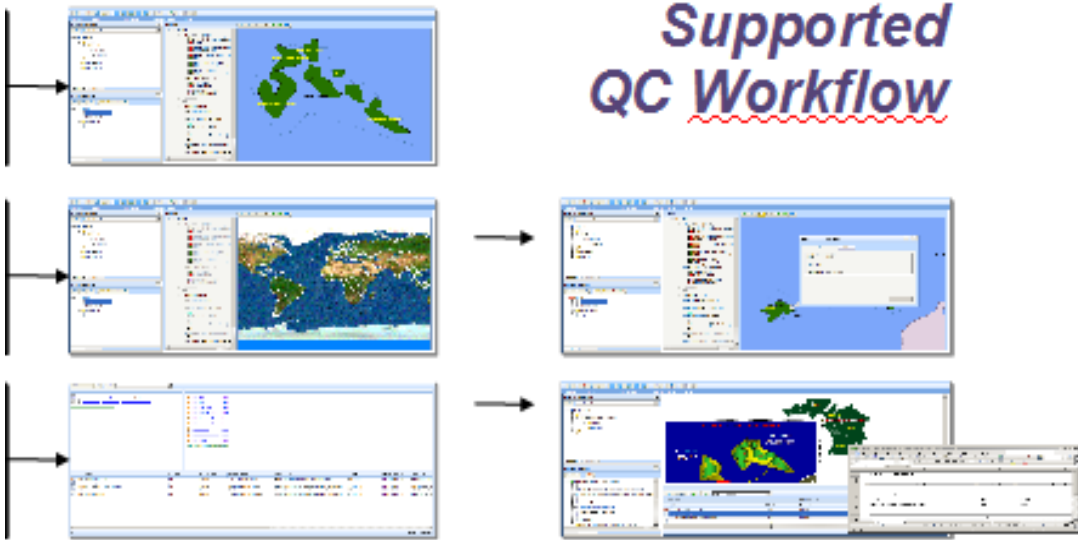
*Integrate with enterprise search*

# Configurable Solution Features



**Efficient and configurable access:**  
 Project data  
 Documents  
 Images  
 Knowledge repositories  
 Narratives  
 Personnel meta-data  
 Corporate process audit trails  
 Taxonomies

- PPDM data model complemented by process and document management and role-based user interface
- Repeatable and adaptable model
- Execution at a fraction of expense allocated for in-house development



**Supported QC Workflow**

# Rig and Lease Centric Workflows

3GiG | Prospect Director

Page Safety Tools

DataFinder Map

Entity Explorer (Asset)

- Bakken
  - Well Inventory Status
  - WI/NRI Status
  - Land Check List Status
  - Title Opinion Status
  - Ballot Status
  - Title Curative Status
  - Post Production Status
  - JOA Status
  - Land Administration Dashboard
  - Bakken General Documents (3)

### Contents List

A list of contents within Bakken.

Add new entity... Process View Show Filter Apply Filter

Process Quick View

New Well	Well Scoping	Well Ready to Schedule	Well Scheduled	Drilling	Producing	Post Production
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Filters Contents List

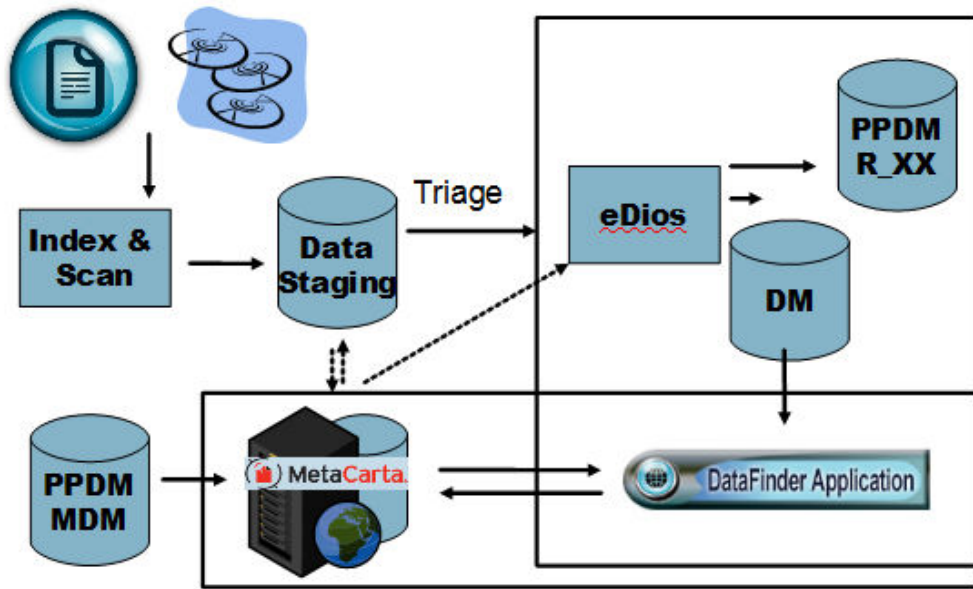
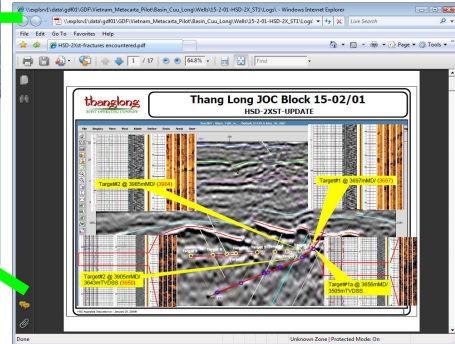
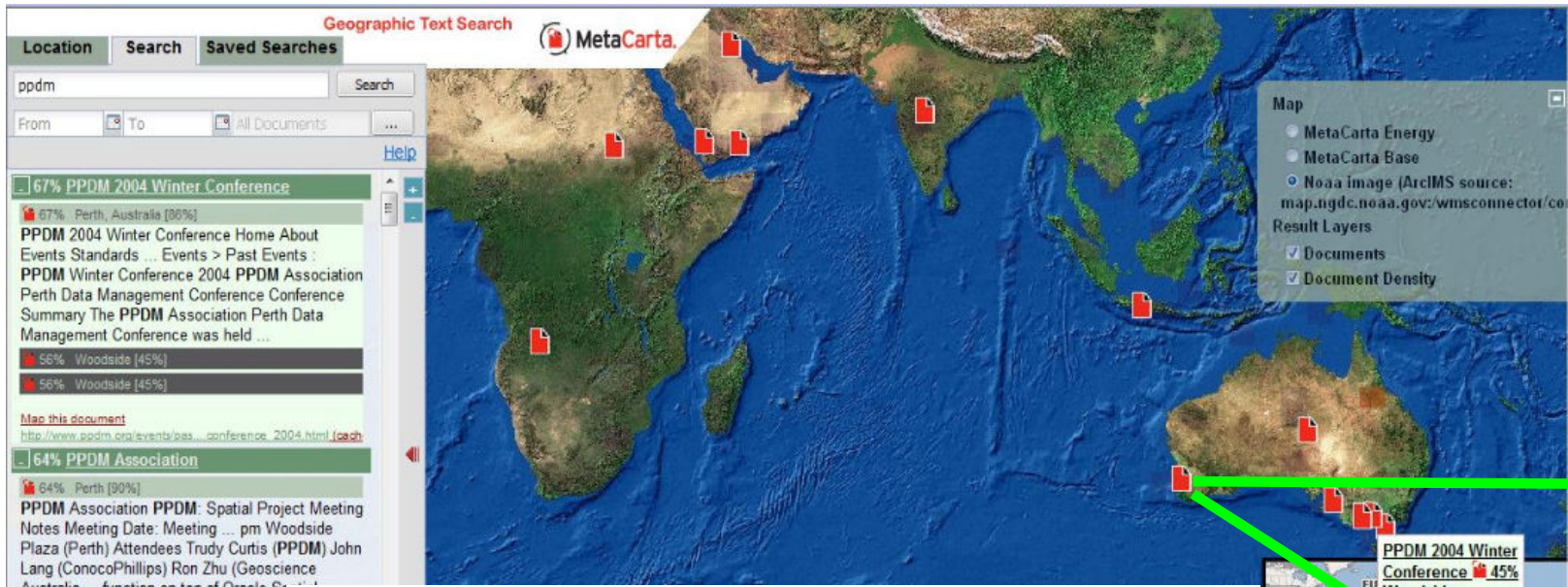
#### Pending Decisions

Status Change	Decision	Action
	<b>On Schedule</b> Change: Behind Schedule to On Schedule	
	<b>At Risk</b> Change: Behind Schedule to At Risk	
	<b>Behind Schedule</b> Change: Behind Schedule to Behind Schedule	
	<b>Return to Well Scoping</b> Change: Behind Schedule to Return to Well Scoping	
	<b>Move to Well Scheduled</b> Change: Behind Schedule to Well Ready to Schedule Complete	

Process Stage	Process Status
Create New Well	New Well
Drilling	On Schedule
Drilling	On Schedule
Drilling	On Schedule
Drilling	On Schedule
Drilling	On Schedule
Drilling	On Schedule
Post Production	Post Production
Post Production	Producing Complete
Post Production	Post Production
Post Production	Post Production
Producing	On Schedule
Producing	On Schedule
Producing	On Schedule
Producing	On Schedule
Producing	On Schedule

48 items in 2 pages

# The Challenge of Unstructured Data



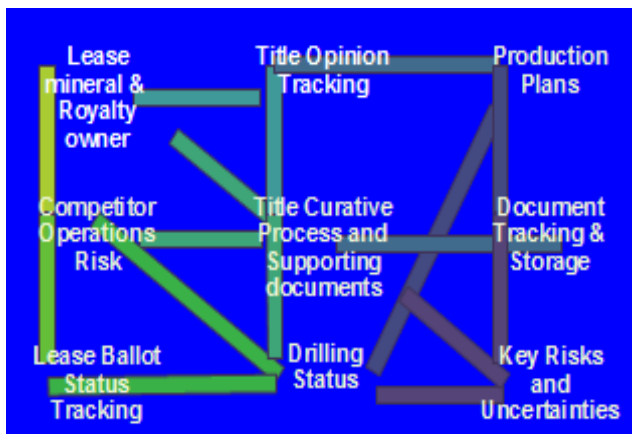
# The Prize:

**“Everybody in this industry talks about business process and knowledge management... (this) can really deliver it.”**

**- VP Geosciences**

**“We have one place to go for all our project information and I have my smart people doing smart things rather than spending time looking for data.”**

**- GOM Asset Manager**



**“Brings STRUCTURE to the CHAOS of information management in our business processes.”**

**- Director, Reserves & Reservoir Engineering**

