Exploration Research to Evaluation – A New Way of Working*

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Abstract

Regional exploration and new basin entry teams leverage a combination of experience and new research to evaluate and high grade new areas to enter or explore. Often the research phase of the project involves extensive public document and information searches online ranging from published articles, conference proceedings, company reports, thesis, books, etc. Research is then read, evaluated and then summarized into new opinions presented for high grading and supporting decisions to explore a new area or bare minimum assigning resources to evaluate further. This process is intuitive and second nature to the experienced geoscientists working in these teams and concepts around process improvement seen in other areas of upstream business process (e.g. well factory, lean, operational excellence) are rarely applied to the regional exploration workflows. However, there are challenges in efficiencies for the regional teams – work is often repeated, research is not “stored”, insight from a particular research article is not leveraged across teams, lessons learned are not shared, the ability to manage insight from multiple regional teams into a new exploration opportunity hopper is difficult.

This article shares a new technology-led process for managing knowledge and information on projects from initial research to the generation of the evaluation report that puts “just enough” structure into the process to provide a common framework and new way of working for all exploration geologists, with the added benefit of providing line of sight for advisors and management on the “hopper” and naturally creates an evergreen “single source” and centralized history of all research (for all basins and potential fields). The approach leverages simple process improvement concepts from other segments within the upstream industry and applies them in a simple and effective way to the complex scientific process of research and evaluation of new basins and plays with significant results in efficiency and workflow improvements.
Exploration Research to Evaluation: A New Way of Working

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1. Introduction

Having the right tools at the right time can make a difference in the way companies evaluate oil and gas potential. E&P and new basin entry teams leverage a combination of experience and new research to evaluate and high grade new areas to enter or explore. Often the research phase of the project involves extensive public document and information searches online ranging from published articles, conference proceedings, company reports, books etc. Research is read, evaluated and then summarized into new opinions presented for high grading and all other stages, naturally creating a “single source” transparency of process at the portfolio level and at the project level.

2. Problem

Lean knowledge management and process improvement is valuable to any upstream business process when applied correctly to a team or an organization. Rigor in decision-making depends on lean knowledge creation, standardized QA and lean principles applied to the problem. However, such practices are rarely attempted by experienced geoscience teams within their E&P workflows, as many have previously struggled to implement, maintain and improve their methodologies.

3. Solution: Proposed New Business Practice

A new technology led process for managing knowledge and information on projects from initial research to the generation of the evaluation report that puts “just enough” structure into the process to provide a common framework and new way of working for all E&P geoscientists. With the added benefit of providing line of sight for advisors and management on the collection of new opportunities, and all other stages, naturally creating a “single source” repository and centralized history of all research (for all basins and potential fields) and projects.

1. New Tool to Facilitate Change

To facilitate the change C&C Reservoirs needed to leverage new best practices and tools internally to change their report writing organization (management, analysts, researchers, graphics, compilers, editors) to shift the way they worked from batch style delivery to continuous throughput.

2. Manageable Portfolio of all Projects

A birdseye view into all projects, project status, workflow stages and where they are in the pipeline.

3. Constant Evolution - “Check and Adjust” and Continuous Improvement

As the behavior and risk mitigation changes, the technology evolved to fit C&C Reservoirs’ needs.

Behavioral Changes Observed:
1. Direct ownership of their work product
2. Easier to engage with their assignments
3. Better understanding of what is next in the workflow
4. Ensuring that all work and progress was seen by users and peers
5. Allows for time to be spent on technical input and not inefficient administrative work
6. Holds everyone accountable to ensure that all internal work is consistent.

4. Results and Benefits

Key Benefits Seen Through New Business Practice:

1. Transparency
- Ability to quickly assess individual workloads and provide visibility of potential bottlenecks when work is not evenly distributed
- Resulting in a more collaborative work environment

2. Resource Allocation

3. Reduced Project Cycle Time

4. Corporate Memory, Knowledge Transfer

- All individual and team contributions, best practices and feedback are stored within the team and individual contributions.

5. Trackable Quality Assurance Process

- Improved due diligence on project content and quality
- Increased insight & visibility into workflow

6. Team and Individual Contributions

- Outcomes of individuals knowledge is seen & contributed to company bottom line
- Project workflow in application - bottom-up intuitive = buy-in is fast

7. DAKS IQ

The approach leverages simple process improvement concepts from efficiencies within the upstream industry and applies them in a simple and effective way to the complex scientific process of research and validation of new basins and plays with significant results in efficiency and workflow improvements.

Figure 1. Proposed areas of study by C&C Reservoirs

Continual Challenges Encountered across the Organization:
1. Work is often duplicated, unnecessarily
2. Research and feedback on issues and recommendations are not captured, recorded or are easily accessible for practical use
3. Insight from a particular research paper is not leveraged across teams and projects
4. Lessons learned are rarely shared, through training or mentorship
5. The ability to manage insight from multiple teams into a new exploration opportunity is difficult
6. Challenging to understand the bottlenecks in project workflows, or easily identify ‘red flags’ in projects. Such outliers are not ‘obvious’ and not able to be corrected immediately
7. No visibility of a project through stage gates for individual team members or management, often resulting in missed deadlines or re-work

3. Conclusions: Where We See Value

Implications for C&C Reservoirs:
- “By implementing this tool and workflow, C&C Reservoirs is using technology to ensure a rigorous QA process.
- “In a time where we have a changing workforce, this tool has given us the ability to ensure we have an archiving of years of years of knowledge.
- “Holds everyone accountable to ensure that all internal work is consistent.
- “Ensures that the right people do the right work at the right time in a complex knowledge management organization in order to optimize, expedite and be effective all at the same time.

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