

# **PS Exploration Research to Evaluation – A New Way of Working\***

**Stephanie Meynard<sup>1</sup> and Kandy Lukats<sup>2</sup>**

Search and Discovery Article #42141 (2017)\*\*

Posted October 16, 2017

\*Adapted from poster presentation given at 2017 AAPG Annual Convention & Exhibition, Houston, Texas, April 2-5, 2017

\*\*Datapages © 2017 Serial rights given by author. For all other rights contact author directly.

<sup>1</sup>C&C Reservoirs, Houston, Texas ([stephanie.meynard@ccreservoirs.com](mailto:stephanie.meynard@ccreservoirs.com))

<sup>2</sup>3GiG, Houston, Texas

## **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.



## 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, thesis, books etc.

Research is read, evaluated and then summarized into new opinions presented for high grading and supporting decisions to explore a new area or assign resources to evaluate further.

## 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.

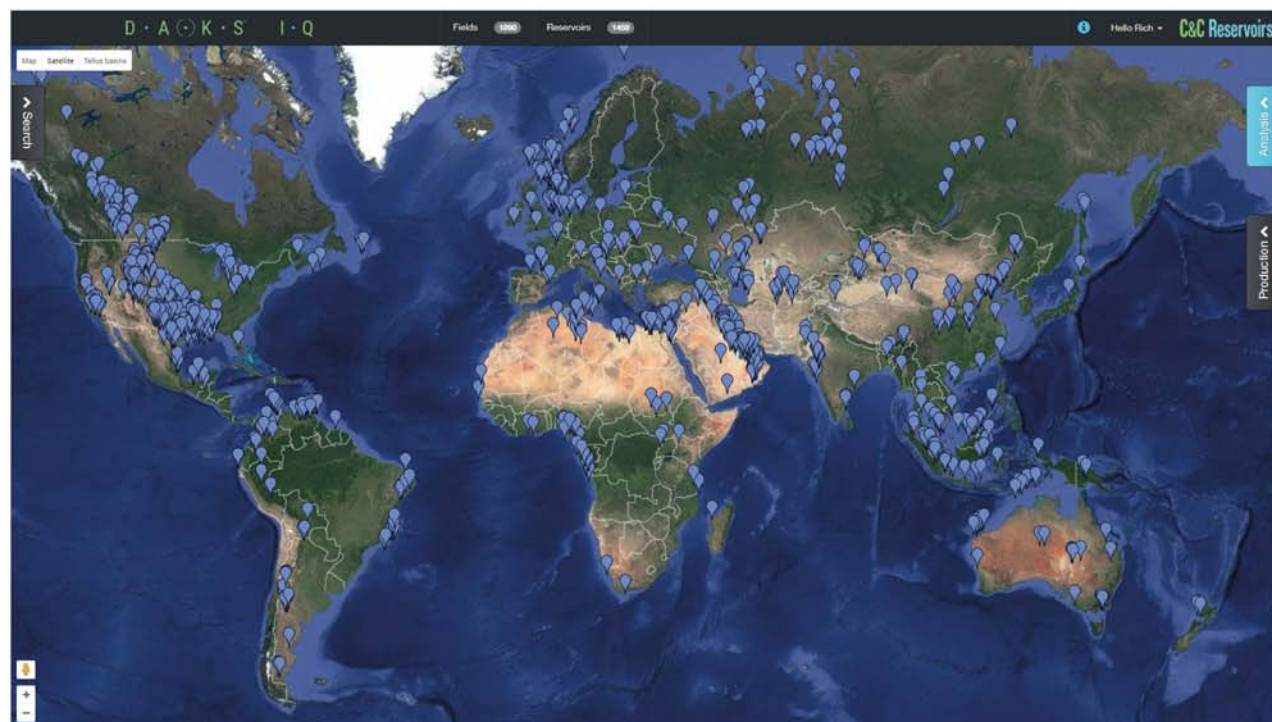


Figure 1. Regional view of proposed areas of study by C&C Reservoirs

## 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

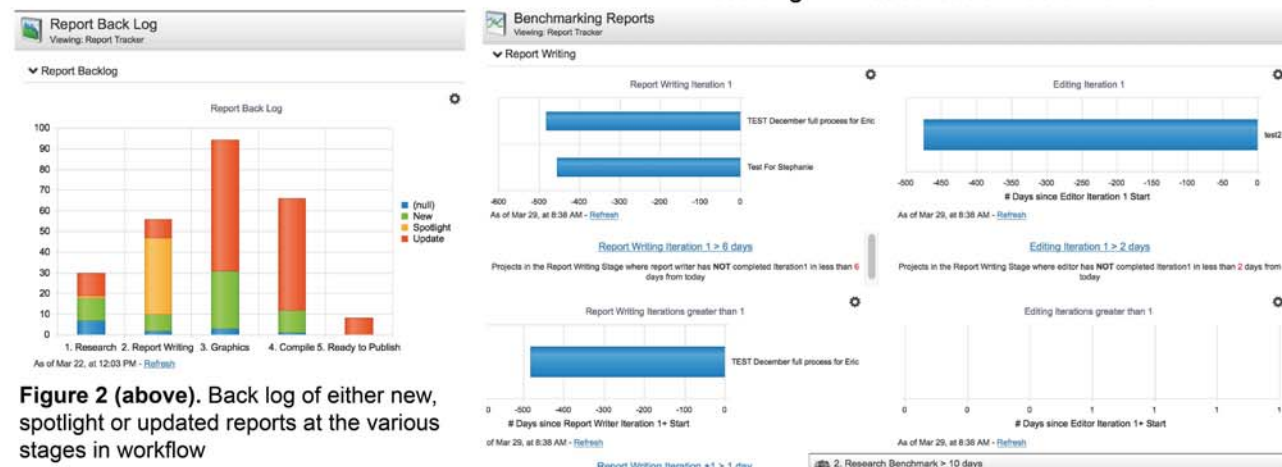


Figure 2 (above). Back log of either new, spotlight or updated reports at the various stages in workflow

Figure 3 (right top). Graphs illustrating benchmarks to the report writing and editing iterations

Figure 4 (right bottom). List of projects with number of days in the research stage that have exceeded the 10 day benchmark

## 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 geologists. 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.

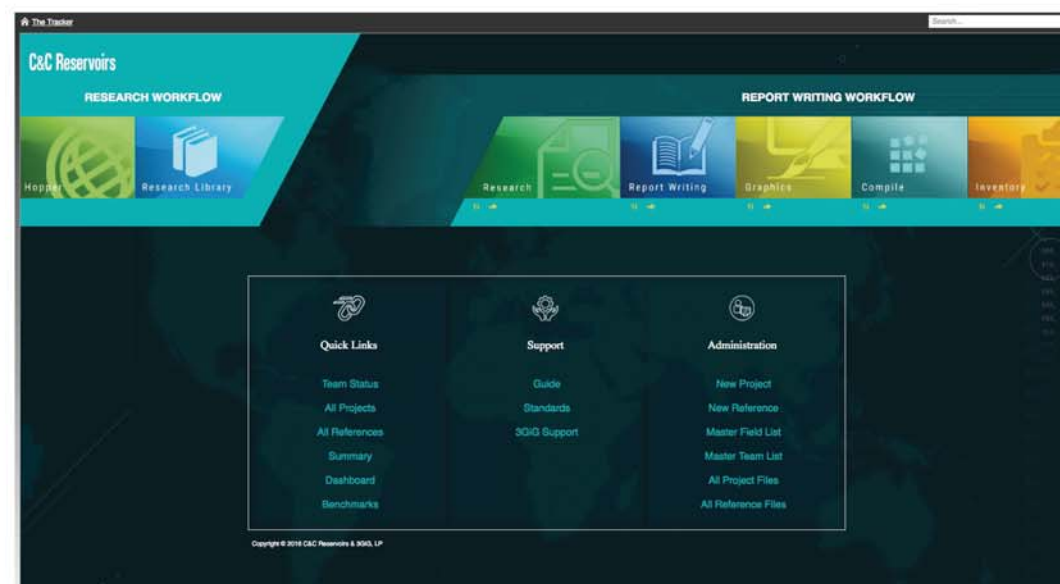


Figure 5 (above). Homepage with a 'quick-links' management dashboard

Figure 6 (right). Management dashboard according to number of projects assigned to each team member

### 2. Manageable Portfolio of all Projects

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

Project Started	Project Duration	Project	Year	Stage	Status	Type	Parried	Spotlight	Source	Priority	UFK	AAPG Stamp	Region	Country	Basin
Nov 20 2014	636	Mansuri & Ab Teymour U2014	2014	6. Inventory	Active	Update				Low	Yes	Yes	Middle East	Iran	Zagros Foldbelt
Jul 25 2014	747	Abbasq U2014	2014	6. Inventory	Active	Update				High	Yes	Yes	Middle East	Saudi Arabia	Widyan - North Arabian Gu
Mar 20 2014	858	Abu Gharadig U2014	2014	7. Published	Published	Update				High	Yes	Yes	Africa	Egypt	Western Desert
Jan 02 2014	935	Agwayita U2014	2014	7. Published	Published	Update				High	Yes	Yes	Latin America	Peru	Ucayali
Jun 04 2014	731	Ain Zalan U2014	2014	6. Inventory	Active	Update				High	Yes	Yes	Middle East	Iraq	Southeast Turkey Foldbelt
May 27 2015	490	Al Dabbiya N2015	2015	6. Inventory	Active	New				High	Yes	Yes	Middle East	United Arab Emirates	Rub al Khali
May 06 2014	764	Albeismola U2014	2014	6. Inventory	Active	Update				Low	Yes	Yes	Russia and Caspian Sea	Kazakhstan	Precaspian
Nov 07 2014	626	Alrar U2014	2014	7. Published	Published	Update				High	Yes	Yes	Africa	Algeria	Illizi - Ghadames
Jan 16 2013	1,328	Amal U2013	2013	6. Inventory	Active	Update				High	Yes	Yes	Middle East	Libya	Sirt
May 02 2014	769	Angai U2014	2014	6. Rejected	Rejected	Update				Low	Yes	Yes	Asia-Pacific	Malaysia	Malay
May 02 2014	770	Angai K U2014	2014	6. Rejected	Rejected	Update				Low	Yes	Yes	Asia-Pacific	Malaysia	Malay
May 29 2014	755	Asray U2014	2014	6. Inventory	Active	Update				High	Yes	Yes	Latin America	Colombia	Llanos
Apr 09 2014	840	Arcabuz Culebra U2014	2014	7. Published	Published	Update				High	Yes	Yes	Latin America	Mexico	Burgos
Apr 09 2014	840	Arenque U2014	2014	7. Published	Published	Update				High	Yes	Yes	Latin America	Mexico	Tampico
Apr 09 2014	840	As Saram U2014	2014	7. Published	Published	Update				High	Yes	Yes	Africa	Libya	Sirt
Nov 20 2013	1,036	Asgard-Midgard U2013	2013	6. Inventory	Active	Update				High	Yes	Yes	Europe	Norway	Mid-Norway Shelf (Voring E
Aug 13 2014	865	Ashtanah U2014	2014	6. Inventory	Active	Update				Low	Yes	Yes	Russia and Caspian Sea	Kazakhstan	North Caspian
Nov 09 2012	1,362	Atlantis N2012	2012	6. Inventory	Active	New			Hot New Area	Low	Yes	Yes	North America	United States of America	East Gulf Coast Tertiary
Aug 01 2012	1,407	Atrush N2012	2012	6. Inventory	Active	New			Hot New Area	High	Yes	Yes	Middle East	Iraq	Southeast Turkey Foldbelt
Nov 26 2014	836	Bachaguro U2014	2014	6. Inventory	Active	Update				High	Yes	Yes	Latin America	Venezuela	Marscabo
Nov 07 2014	626	Bach U2014	2014	7. Published	Published	Update				High	Yes	Yes	Africa	Egypt	Gulf of Suez
Jun 04 2014	731	Bai Hassan U2014	2014	6. Inventory	Active	Update				High	Yes	Yes	Middle East	Iraq	Zagros Foldbelt
Jan 27 2015	524	Balkhuqum U2015	2015	6. Inventory	Active	Update				Low	Yes	Yes	Asia-Pacific	China	Junggar
Jan 15 2014	978	Balidapa U2014	2014	6. Inventory	Active	Update				Low	Yes	Yes	North America	United States of America	West Gulf Coast Tertiary
Dec 18 2013	947	Balim N2013	2013	6. Inventory	Active	New				High	Yes	Yes	Africa	Egypt	Nile Delta
Oct 07 2014	657	Banru Ump N2014	2014	7. Published	Published	New			Basin Strategy Coverage	High	Yes	Yes	Asia-Pacific	Indonesia	Java Sea
May 02 2014	770	Baram U2014	2014	6. Inventory	Active	Update				Low	Yes	Yes	Asia-Pacific	Malaysia	Sabah

Figure 7. List of some of the projects in the system. This gives management insight into where projects are in the pipeline and a quick, immediate view of any red flags

### 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:

- Direct ownership of their work product
- Easier to engage with their assignments
- Better understanding of what is next in the workflow
- Ensuring that all work and progress was seen by users and peers
- Allows for time to be spent on technical input and not inefficient administrative work = value add

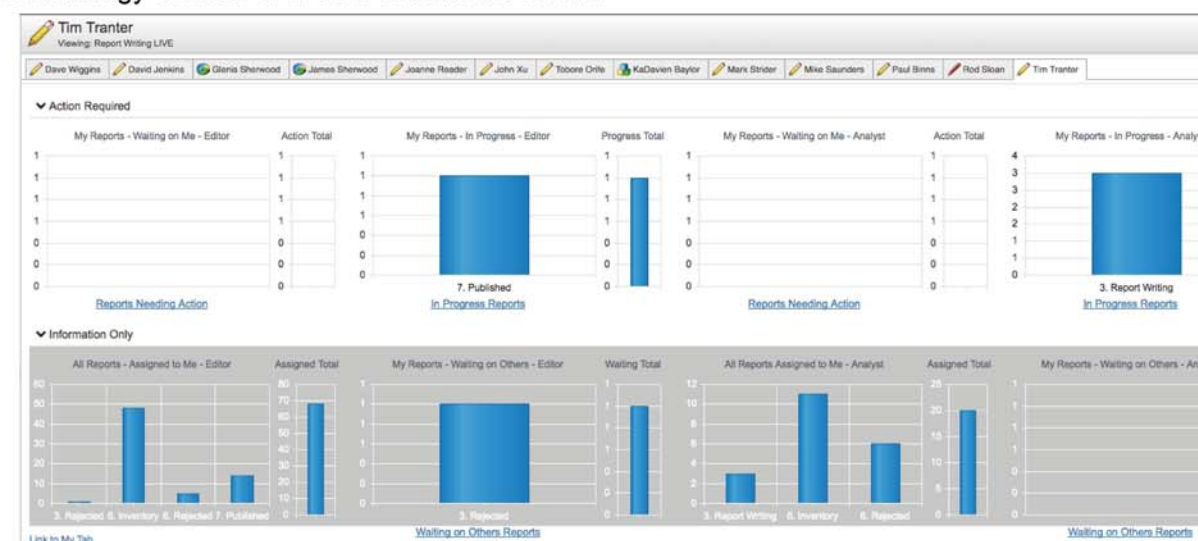


Figure 8. Graph of reports moving through the process, providing a line of sight for management and team members on what work is coming through the pipeline

## 4 Results and Benefits

### Key Benefits Seen Through New Business Practice:

#### 1. Transparency

- Transparency of process at the portfolio level and at the project level

#### 2. Resource Allocation

- 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



Figure 9. Number of projects at each stage in lifecycle

#### 3. Reduced Project Cycle Time

- Benchmarking metrics
- Collecting and measuring data, which includes duration within stages and quality of the technical assurance process

#### 4. Corporate Memory, Knowledge Transfer

- All individual and team contributions, best practices and feedback are stored within the system to pass along to incoming team members and management over time

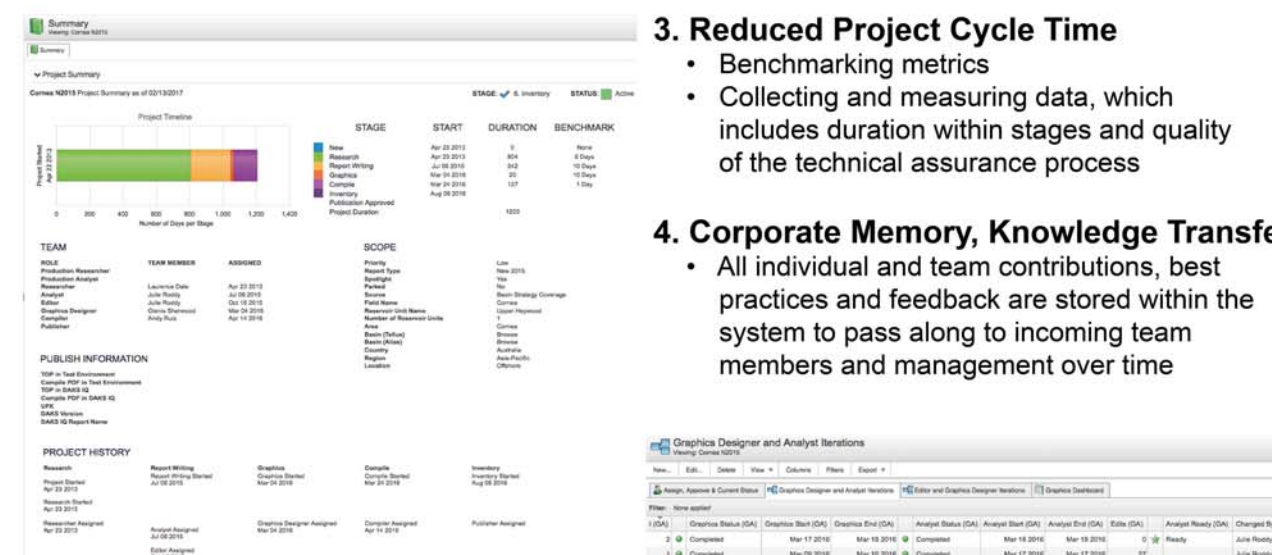


Figure 10 (above). Project summary audit report for lookback

#### 5. Trackable Quality Assurance Process

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

#### 6. Team and Individual Contributions

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

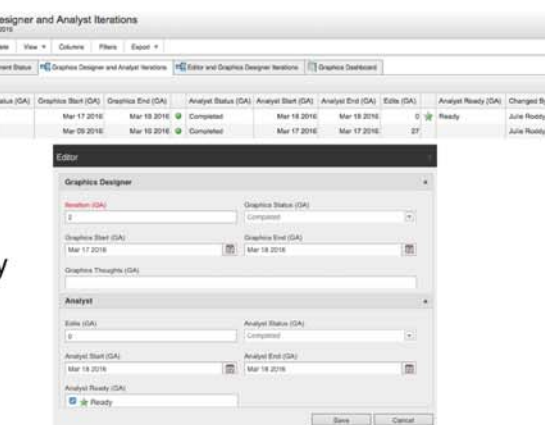


Figure 11. Improved communication and QA tracking through the iteration records between graphics and analyst

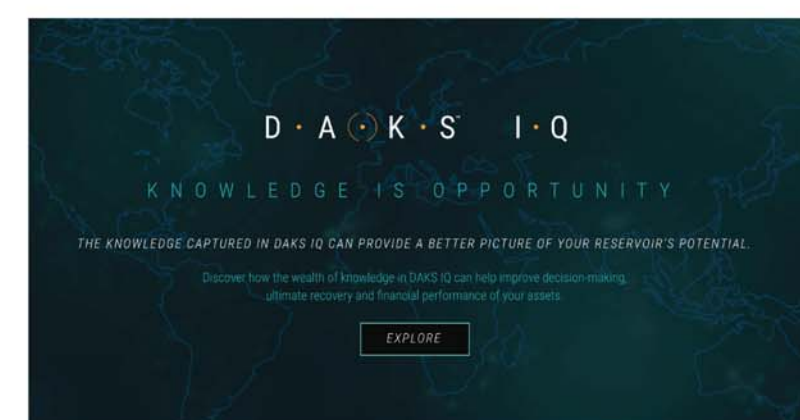


Figure 12. Improvements seen in knowledge, data and information of all work completed

## 5 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 archive of years and 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.
- Giving C&C Reservoirs stronger knowledge, a higher-quality product, consistency across teams and quality *everytime*.

### Acknowledgements:

The authors of this poster would like to thank the leadership expertise at C&C Reservoirs for implementing this improvement and 3GiG for the use of their platform, expertise in designing this tool.

