CDA

part of

Oil & Gas UK

The business value case for data management - a study

The Process

Schlumberger

Background

Common Data Access Limited (CDA) is a not-for-profit subsidiary of Oil & Gas UK, the leading representative body for the UK offshore oil and gas industry.

During 2010 CDA commissioned Schlumberger to study the 'Value of Data Management'. This study included interviews with senior executives, a search of related literature, a roundtable meeting and a variety of other inputs all designed to illustrate the high value of Data and Data Management to working exploration and production companies.

In the course of the study input was provided by staff at CDA, Schlumberger and a wide range of other organisations. In particular the authors would like to thank staff from the following organisations for providing invaluable insights:

Apache	BG	BP	Centrica	Chevron
ConocoPhillips	Dana Petroleum	DONG Energy	EnQuest	Fairfield Energy
First Oil	Ithaca	Noreco	NPD	Petoro
Premier Oil	Shell	Talisman Energy	Total	UK DECC

This is the "Process" document. It is one of the four documents delivered by the study:

Results	Roundtable	Related Literature	Process
The value that data management and data deliver to E&P companies	A discussion held between senior oil executives about data management	A survey of the documents about the value of data in the oil industry	A description of the process that was followed during this study

All four can be downloaded from the Oil & Gas UK web site at:

http://www.oilandgasuk.co.uk/datamanagementvaluestudy/

About the authors

Steve Hawtin joined Schlumberger in 2001 where he has consulted on a wide range of Information Management engagements. For more than 10 years before that Steve worked for Oilfield Systems Limited where, as Technical Director, he was responsible for the creation of products such as GeoScene, DAEX and Quadrate.

David Lecore has worked in the Oil and Gas industry for 25 years, working initially for major operators and then joining Schlumberger in 1997. David's work in Schlumberger has focused on both Information Management and Knowledge Management, concentrating on the governance, process, strategy and value aspects as opposed to technology solutions.

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The data gathering process

An important strategic objective for CDA is to "Collect and publish anecdotal and other evidence supporting the case for the positive impact of good data management practices on the business". Following a competitive process Schlumberger Information Solutions were commissioned to conduct a study to provide evidence for this statement. The initial scope of the study specified that it would include input from UK and non-UK companies and from CDA members and non-members.

This work has resulted in a set of documents including a report that summarises all the findings. The aim of this document is to outline the way that these results were obtained. The goal of the study was to document the current perception of the management of petrotechnical data. This was achieved through a series of interviews, research into existing literature, a roundtable and extensive analysis of these inputs.

Interviews

The approach that was taken was to interview a number of oil company technical managers with roles such as Exploration, Asset, Subsurface or Production Manager. It was felt important to focus on the users of data rather than those involved with the managing it.

Over the course of the period September –November 2010 twenty two interviews were conducted in Norway, the UK and Kuwait. We would like to thank all the companies involved who are listed at the beginning of this document.

Each interview involved two consultants who alternated between directing the conversation and noting responses. The checklist used to structure these interviews has been included in a later section of this document. Most interviews were scheduled to last an hour, although some overran as the interviewee explored some of the topics raised.

Roundtable

In January 2011 a roundtable was organised with participation from the following:

Klaas Koster	Development Manager: Apache	Simon Hendry	Exploration & Appraisal Manager: BP
Colin Percival	Exploration Manager: Dana Petroleum	Brian Brown	Contracts Manager: Fairfield Energy
Dave Kemshell	Asset Development Leader: Shell	Ton Ruijgrok	Information Manager: Total

We would like to thank these individuals for providing their time and input to the study. The resulting discussion has been transcribed in the "Roundtable" document.

Literature Research

A wide range of potential sources were explored to uncover existing papers that were pertinent to the topic. These are listed in the "Related Literature" document. In addition a number of terms were researched and the results have been included in the report.

Other Research

A range of other techniques were employed including Monte-Carlo simulation and automated crawling of web sites. These activities are described in full elsewhere.

Questionaire

In order to ensure consistency between interviews a "checklist" of key topics was prepared. The conversations allowed each senior executive to address the various topics in the way that they felt was most appropriate. The checklist was mainly used towards the end of each session to steer the discussion towards topics that had not been sufficiently explored.

Overview

- What is your role in your organisation?
- Is your primary focus on issues that affect the business today, this week, this month, this year or this decade?
- What is the expected ROI on investments that you make today?
- What metrics do you use to compare your company's performance to that of others?
- How do you treat data assets in the company accounts?

Value Generation

- With the benefit of hindsight what action had the biggest impact on your company's value in the last 5 years? What part, if any, did the petrotechnical data have in that?
- If the company did nothing what would be the effect on your market capitalisation in the last year (accounting for external influences). And therefore what impact did your decisions have on the value of the company?
- Of the total value added last year by corporate actions what proportion comes from increases in production, what from identifying new reserves, what from increasing the company's assets and what from other activities?
- What corporate activity, other than production and reserves increases, has the biggest impact on shareholder return? How does that compare to production and reserves changes?

Value of Data

- What proportion of the change in the value of reserves comes from understanding the subsurface?
- How much of the difference in production is due to understanding the subsurface?
- If a company was to want to purchase all of the data you have for a particular asset how would you value it?

Value of Projects

- How much is typically spent in one year on activities to increase reserves?
- How much is typically spent in one year on activities to increase production?
- What proportion of project spend is allocated to information studies?
- To what level are you responsible for initiating internal studies?
- Does your company measure a) the cost of doing interpretations b) the 'value added' by the interpretation work?
- Have you ever analysed the quality of your corporate data? What impact would you expect your level of data quality to have on the levels of risk your projects have?
- Has your organisation ever attempted to benchmark the time spent performing value added work vs non-value added support activities?

Data Process

- Which categories of data do you have you some responsibility in purchasing (Seismic / Log / Drilling data / Production data / External Studies)?
- What would you anticipate would be the productive life of the data your company purchases? What about data you generate?
- What would the productive life of the data be if you invested zero in interpreting it?
- If you were to invest nothing in the maintenance of data, what would be impact on its expected productive life?
- When acquiring data (seismic, well log etc) how do you anticipate the costs to manage it throughout the 'E&P Value Chain' and the 'Data Lifecycle'?
- What is your data management budget?
- Is the data management budget dependent on the data volumes?
- What do you do to demonstrate that you are able to 'realise value' from a new data acquisition?

Wrap-up

- Do you spend enough on data management – relative to the cost of data acquisition / creation and the impact it has on business drivers?
- Do you have any examples that you are willing to share in any way where data was applied to a decision that resulted in reduced costs or additional revenues?
- Do you have any examples that you are willing to share in any way where data was poorly applied to a decision that resulted in additional cost or delayed revenue?

Roundtable

A roundtable was held on Wednesday 12th January 2011 at CDA's Aberdeen offices. The goal of this event was to:

- Validate existing material gathered through interviews and research
- Gain additional information on a similar theme
- Get quotations that could be used to support the study report

The event was initiated by having the attendees participate in a multi-player "game". This divided the group into three pairs of players, each pair competed against the others to balance between exploring and interpreting data as they attempted to identify "payout squares" in a new area. The goal of this activity was to demonstrate that finding an optimal business strategy is challenging even within a simplistic game world.

Once the game had been played and discussed the participants moved on to the main conversation. This was transcribed and is available in the "Roundtable" document. The conversation was steered towards addressing the following list of questions that had been sent to the attendees in advance:

Value based management

The available budget is always limited. Managers must decide how to balance spend on things like buildings, staff, infrastructure and facilities construction. This means they have to estimate the value that alternate possibilities will deliver.

Question: *How do you compare the value that different possible expenditures deliver to your organisation?*

The Value of Data Management

The value that petrotechnical data generates is substantial. Data in all its forms, at all stages of the E&P value changing from licence / basin entry to mature field rejuvenation is therefore an important company asset.

Question: *Do you think your company is doing everything it should do to preserve and realise the value of all data?*

Changes in attitudes towards Data Management

The 'data environment' has changed over the decades, with a move from physical to digital data, the ever increasing volumes and types of data, while at the same time peoples' attitudes towards the benefits and needs for data management has also had its ups and downs.

Question: *What is your own current attitude towards the data management discipline?*

The 'Data Manager' role

It is common for Data Managers to say that their role is under appreciated; it is not a well respected career choice, training and development plans are not commonplace and career road maps don't lead to senior positions.

Question: *Is this true? If it is why? If not, in what way is it not?*

The 'scope' of the Data Management function

Traditionally the 'data management department' has focused: More on raw and original format data - Less on interpreted and results data; More on the Exploration phase - Less on the Production phase; More on G&G - Less on Production and Drilling

Question: *What is the scope of those you consider 'data managers' within your organisation? Should it change?*

Data Governance

DAMA, the premier organisation for data management professionals worldwide define Data Governance as 'the exercise of authority and control (planning, monitoring, and enforcement) over the management of data assets.'

Question: *What sorts of controls have been created within your own organisation and how well have they been adopted?*

Data Ownership

'Data ownership models' assign various responsibilities to senior managers - who sign the POs, users - who create and manipulate data and to data managers - who manage data. These roles have names such as data owner, data steward and data custodian.

Question: *In your organisation who is the data owner?*