CGG

How to access Legacy and Archive data

Passion for Geoscience

Welcome

- **E&P Data Management Services since 1987**
- **Client base includes all the majors and large independent oil companies, as well as national oil companies and other government agencies**
- **Over 350 E&P clients per annum**
- **30 + Corporate database, GIS, Portal and Enterprise GIS Clients**
- **20 + National government clients**
- **15 + audit/quality assurance or strategic consultancy clients**
- **110 + Intelligent Storage clients**
- **75 + seismic vectorising and processing clients**
- **60 + log digitising, log QC and log processing clients**

CGG – fully integrated Geoscience company

Equipment

Full range of products and clear market leadership Onshore, Offshore and Downhole:

- Technology leadership
- Large installed base
- A cornerstone for CGG integrated solutions

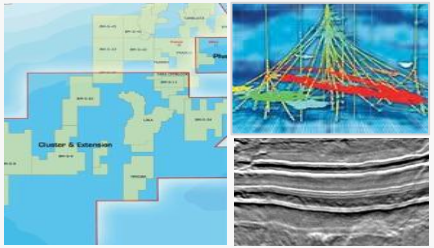
Acquisition

Full range of seismic and other geophysical methods for acquisition:

- Land
- Marine
- Seabed*
- Airborne**

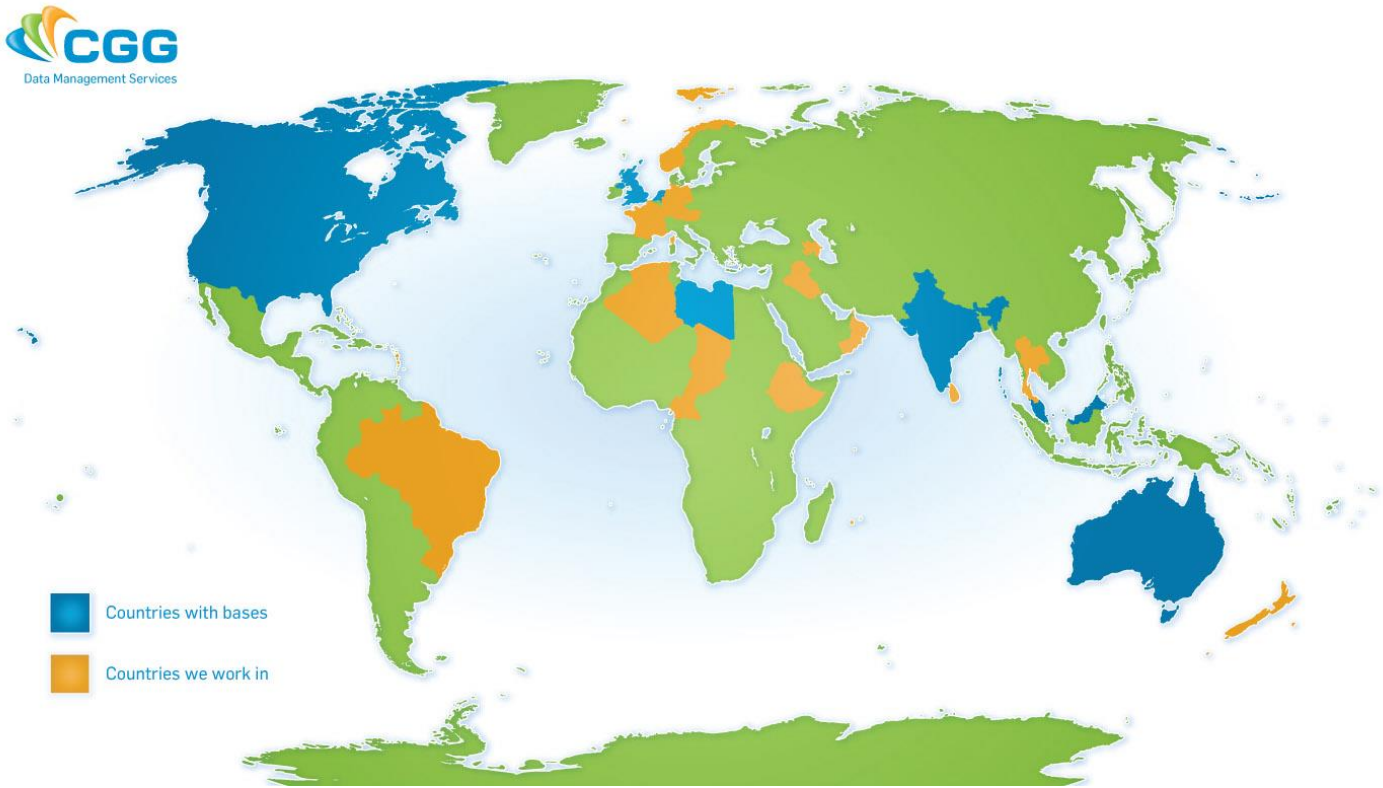
- 10,000 Employees
- 70 locations worldwide
- $4.2 Bn 2011 Pro-forma Revenue

Geology, Geophysics & Reservoir



- Processing & Imaging
- Reservoir Software & Services
- Geological Services
- Exploration & Appraisal
- Satellite Mapping
- Multi-Client Data Library:
  - Seismic, Grav-Mag, Geological
- **Data Management Services**

Global presence, local understanding



Data Management exciting and confusing?

- Data is key to decision making and more data helps reduce risk associated with those decisions

There is a “treasure trove” of data out there but!

- Legacy and archived data is often difficult, if not impossible, to access
  - Tapes, Reports and even core
  - Poor or limited metadata, with a variety of standards
- How do we improve access to legacy and archive data in the future?

The purpose is to reduce RISK by having access to information

A change in thinking?

Storing Legacy and Archive Data v **Managing** Legacy and Archive Data

The Challenge of today

- E&P Assets archived in a variety of locations and formats
- Assets that have been generated and acquired over many years
- Metadata of different quality and different standards
- Lots of wasted time searching for data on multiple systems and possibly not finding it
- Archived data is not easy to find and retrieve at the time of Analysis and Interpretation

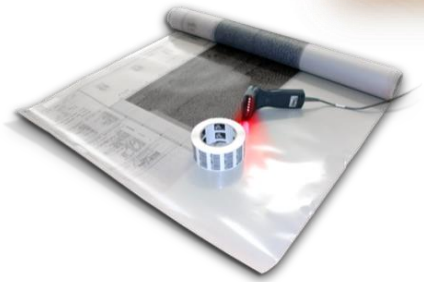
Asset Management – the process

Assessment - Data Prep / Audit

- Physical audit
  - Review the data
  - Completeness of the data set
  - Field data, Obs logs, Nav data, Velocity data
  - Identify associated reports
- Result
  - Report results
    - What's missing?
    - Next steps?
    - Identify priorities
  - Proposal for transcription & scanning
- Fully managed process
  - To agree objectives and rules
- Result
  - Only transcribing & Scanning valid data
  - Lower cost project, shorter timescales

Digitising

- Tape Transcription
  - Large global capability
  - Augments Meta Data
  - Capability includes
    - 7 track, 9 track and 21 track +++
    - Latest output digital or magnetic media
    - RODE encapsulation
    - Meta Data caputure
- Scanning
  - Well logs, Seismic sections, Maps
  - Reports etc
  - QC image and meta data
- Quality Control
- Capability
  - Understanding the data
  - Experienced operators
  - Project Management
  - Multiple UK sites



Meta Data Management

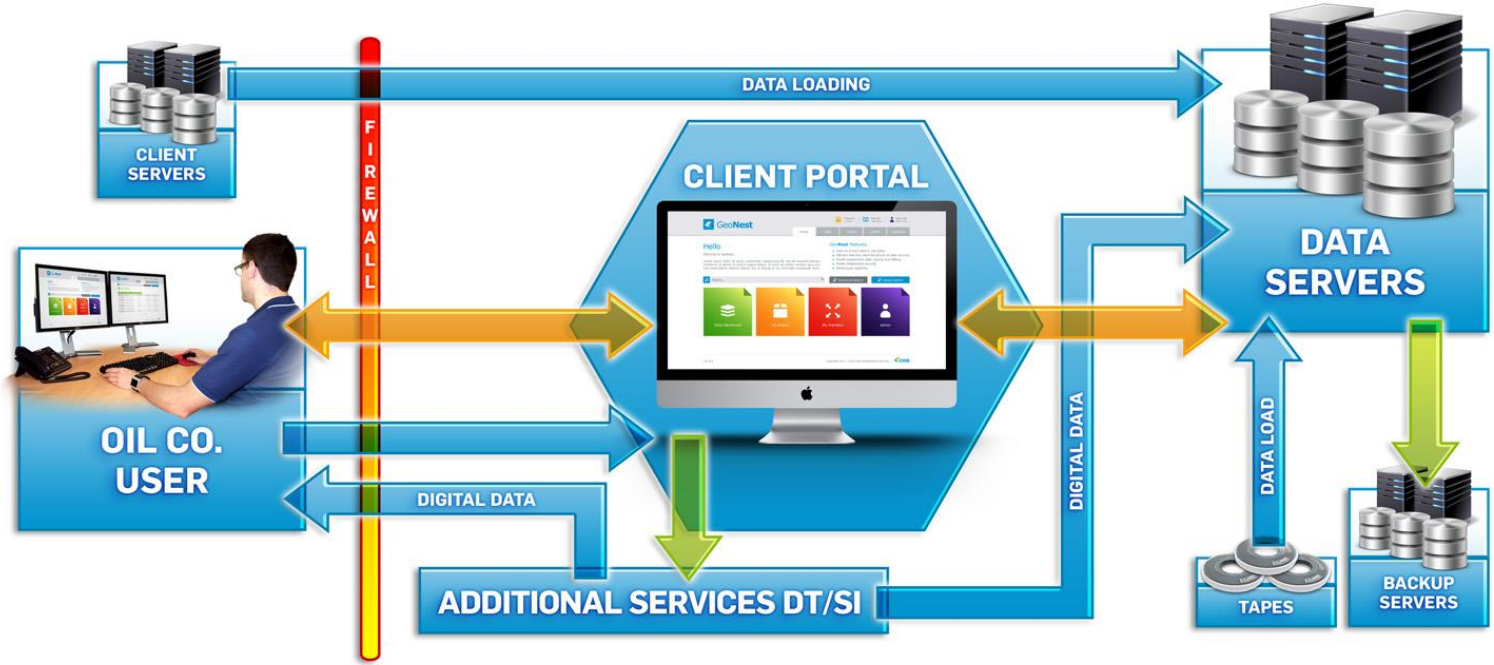
- Getting the right Metadata
  1. Digitise all assets (possibly even the core)
     - Scanning, tape transcription etc
  2. Header Metadata
     - Spatial data, naming, document type, etc
       - Collected when tapes transcribed
  3. Digital view
     - Thumbnail of document held within the Metadata
     - Full digital copy available for view, print, download, working online etc
  4. Management
     - Client specific data

Accessing the data

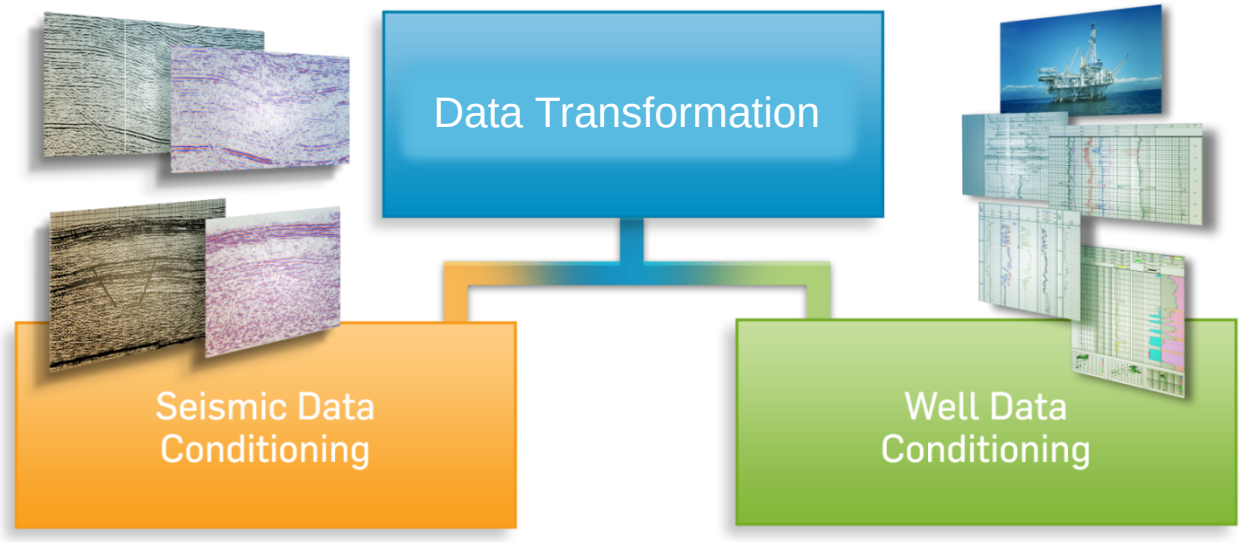
- Making data available at the point of need
  - Online access to legacy and archive data
  - Quality data that can be used in the decision making process

- Client Portal
  - Map or Data Search
  - Simple and intuitive
  - Easy to import and migrate metadata
  - Strong audit trails
  - Strong security
    - Permissions and entitlements
    - Data access by third parties
  - Web based available at the desk top and even the tablet
  - Interface to internal data management system

Technology

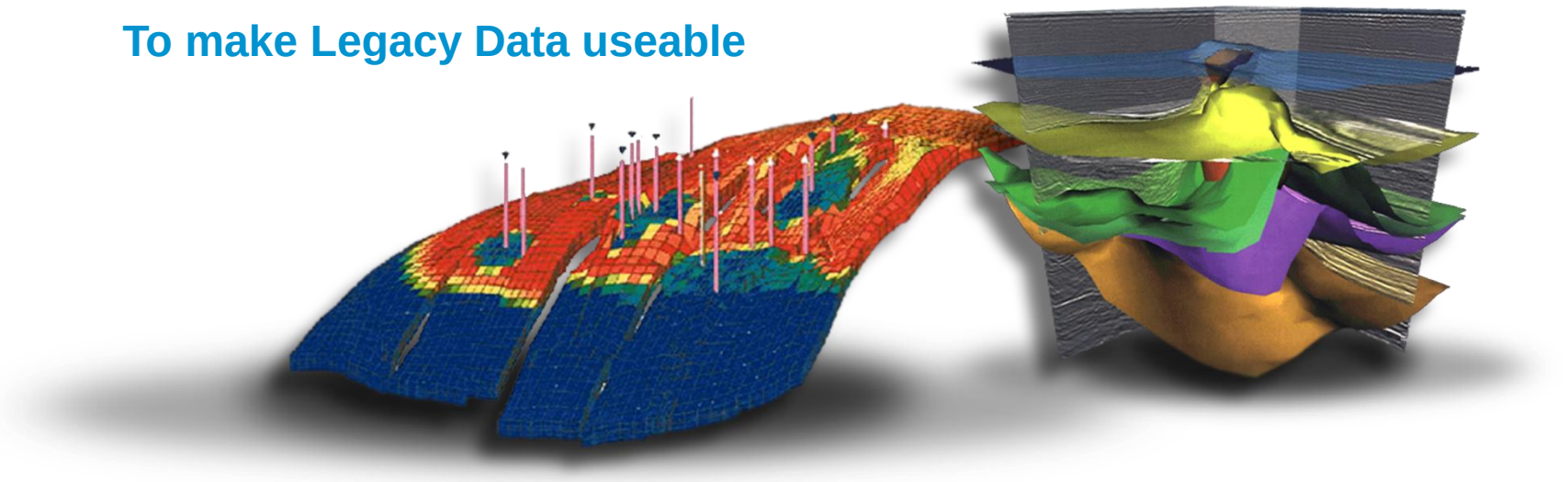

DATA LOADING
CLIENT SERVERS
FIREWALL
CLIENT PORTAL
DATA SERVERS
OIL CO. USER
DIGITAL DATA
DIGITAL DATA
DATA LOAD
ADDITIONAL SERVICES DT/SI
TAPES
BACKUP SERVERS

Data Transformation



The Challenge

To make Legacy Data useable



High Quality Legacy Data

To make Legacy Data valuable

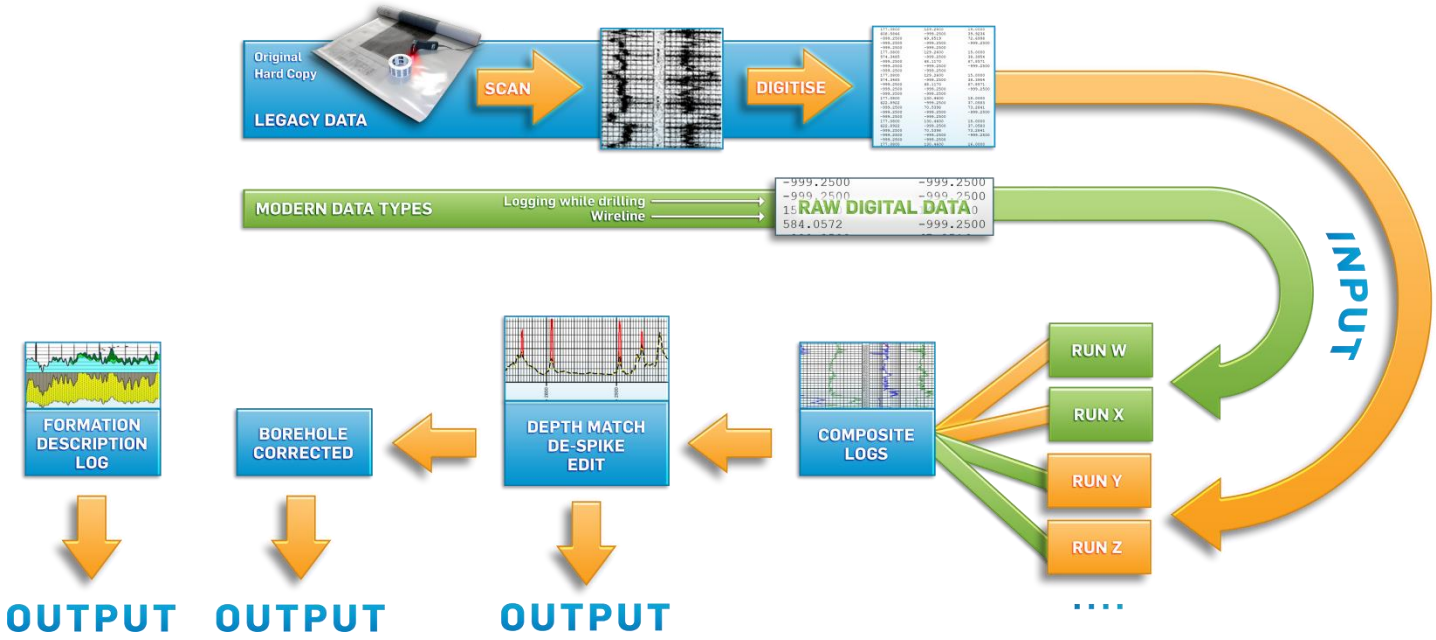
The Goal

- **Good quality data**
- **Well organised data**
- **Easily accessible data**

OUR GOAL

To reduce the risk associated with decisions by making more high quality data accessible

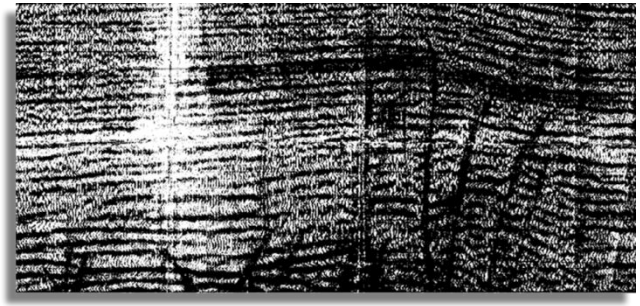
Data Process-Logs



Seismic Vectorisation

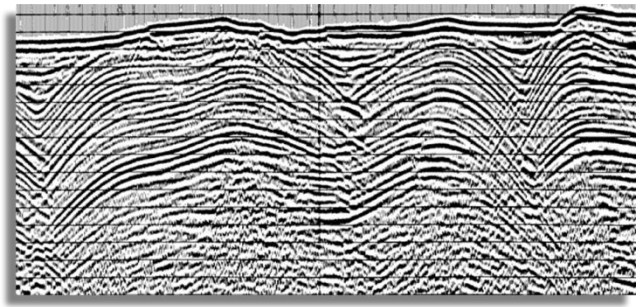
Original Image

Image contains interpretation and faded areas due to degradation of hard copy data.



Original Image

Stack image with amplitude standout. of hard copy data.



Seismic Vectorisation

Vectorised SEG-Y

Interpretation (including labelled areas)

have been removed.

Data has been reconstructed.

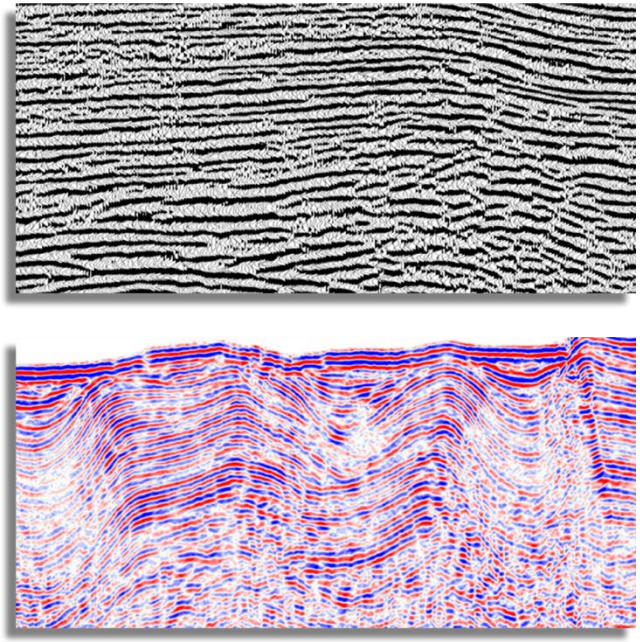
Faded areas have been repaired.

Migration

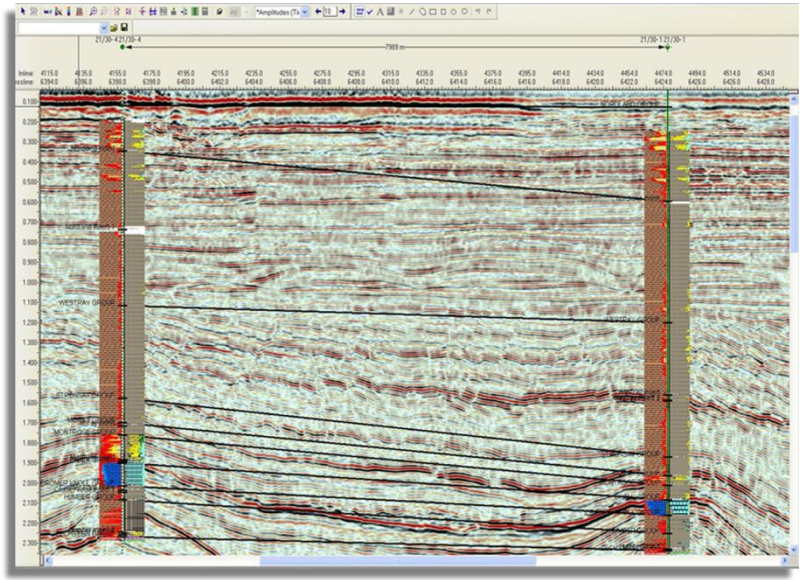
Data has been reconstructed & migrated.

Amplitude standout has been preserved.

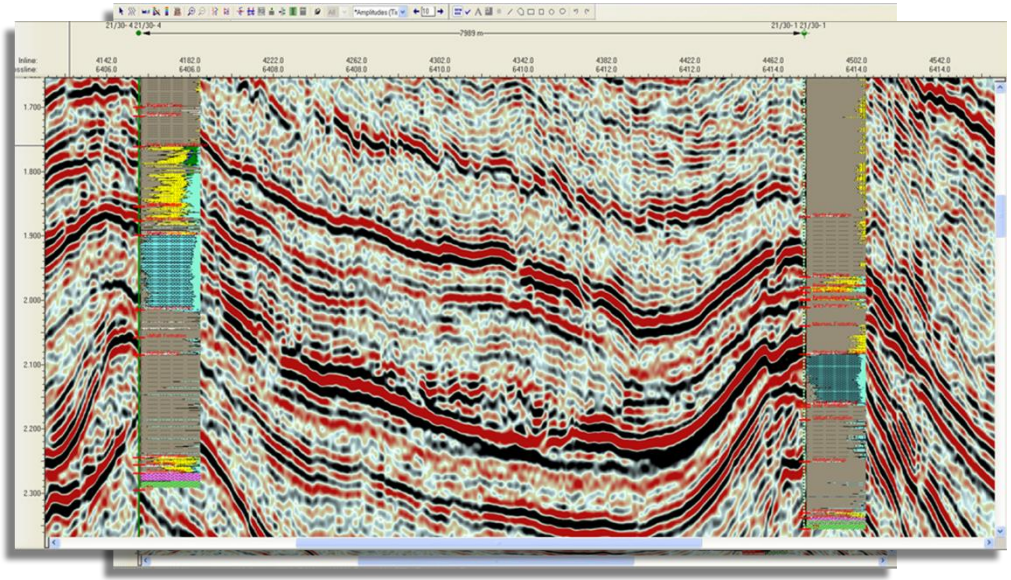
of hard copy data.



Combinations

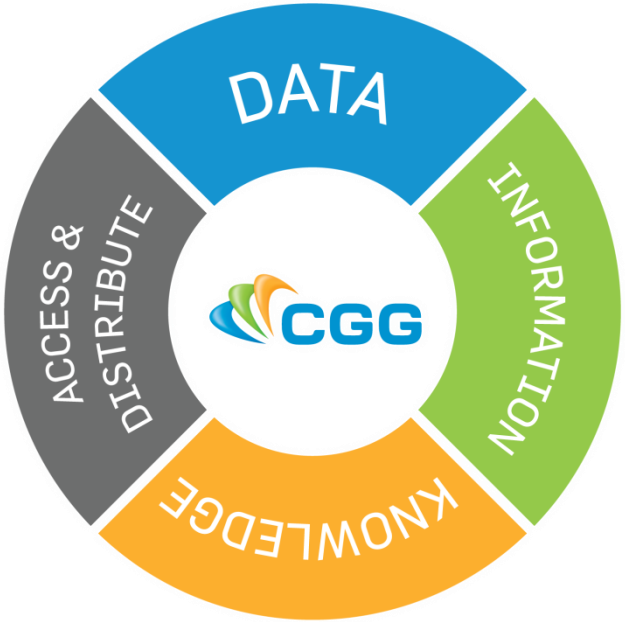


Combinations



The Requirement in summary

- The Requirement
  - Quick and efficient access to the full range of data and knowledge available, on the desktop when required
  - Deliver data in the format required e.g kingdom, Petrel etc
  - Archive solution that is scalable, cost effective and long serving – whether Digital or Physical, or both
  - Client portal that is intuitive to use and gives a full range of services, and interfaces into internal systems as required
  - The ability to move information to the point of need, or the user to the information - securely
  - Ability to continually Audit, add and improve the data



Technology

- Plexus (Traxx replacement)
  - Online Client Portal
  - Multiple sources of data
  - Meta Data Management and Catlaoguing
  - Combines with Warehouse Management System
  - Rolling out as a Global DMS solution
  - Interfaces into internal systems
  - GIS
- Trango
  - Onsite
  - Web based
  - Manages E&P data wherever it is
- Other
  - A range of market of client specific tools
  - *Virtual Data Rooms, Data Brokerage, Workflow Management, Media Transcription, Multi Client etc*

The Challenge of tomorrow

- Data being created at crazy rates
  - *2D then 3D now 4D seismic surveys as one example*
- More exploitation of existing fields and less exploration
  - *More data less risk*
- Processing power moving from the data centre to the desktop
  - *Raw data being used in analysis and interpretation*– e.g *DLIS contains more than LAS with modern array logging tools. Using simplified formats loses some data.*

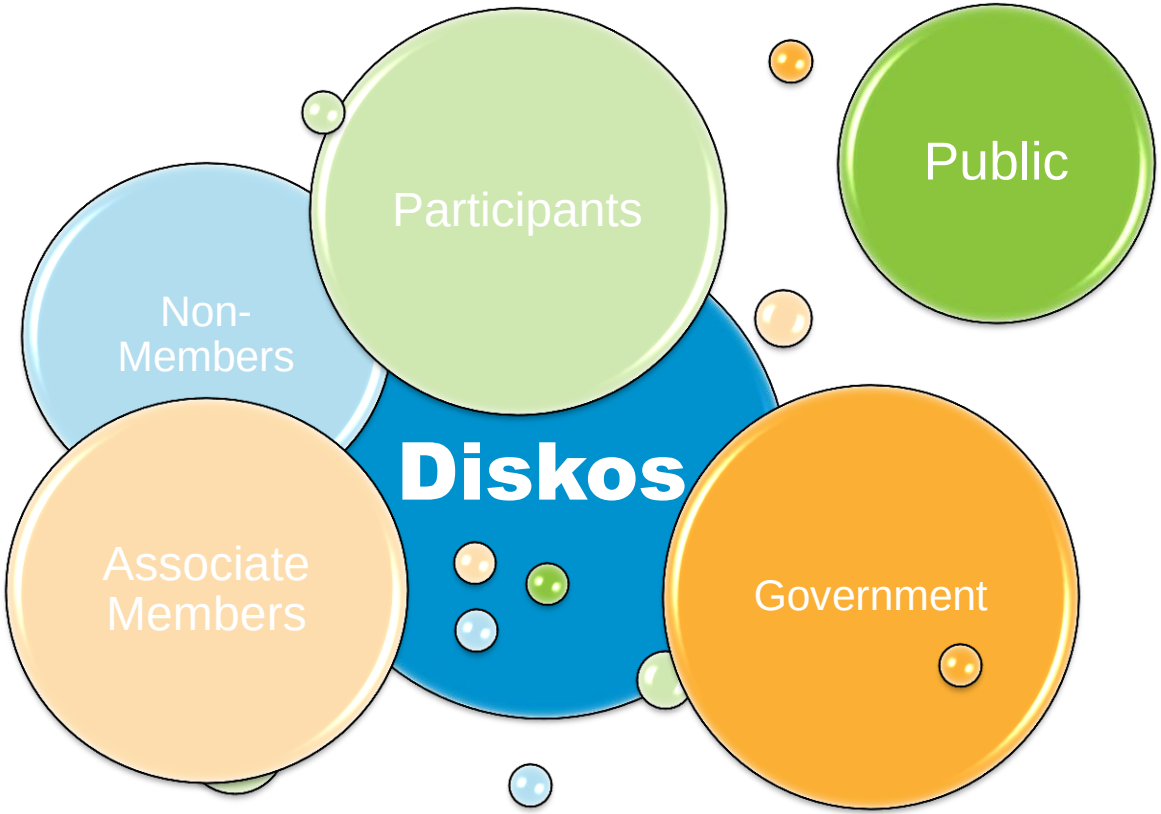
Data becoming Information -

- Big Data
- Analytics
- Unstructured data searching
- Data Mining
- Multiple Sources of information
- Library of information on the desktop

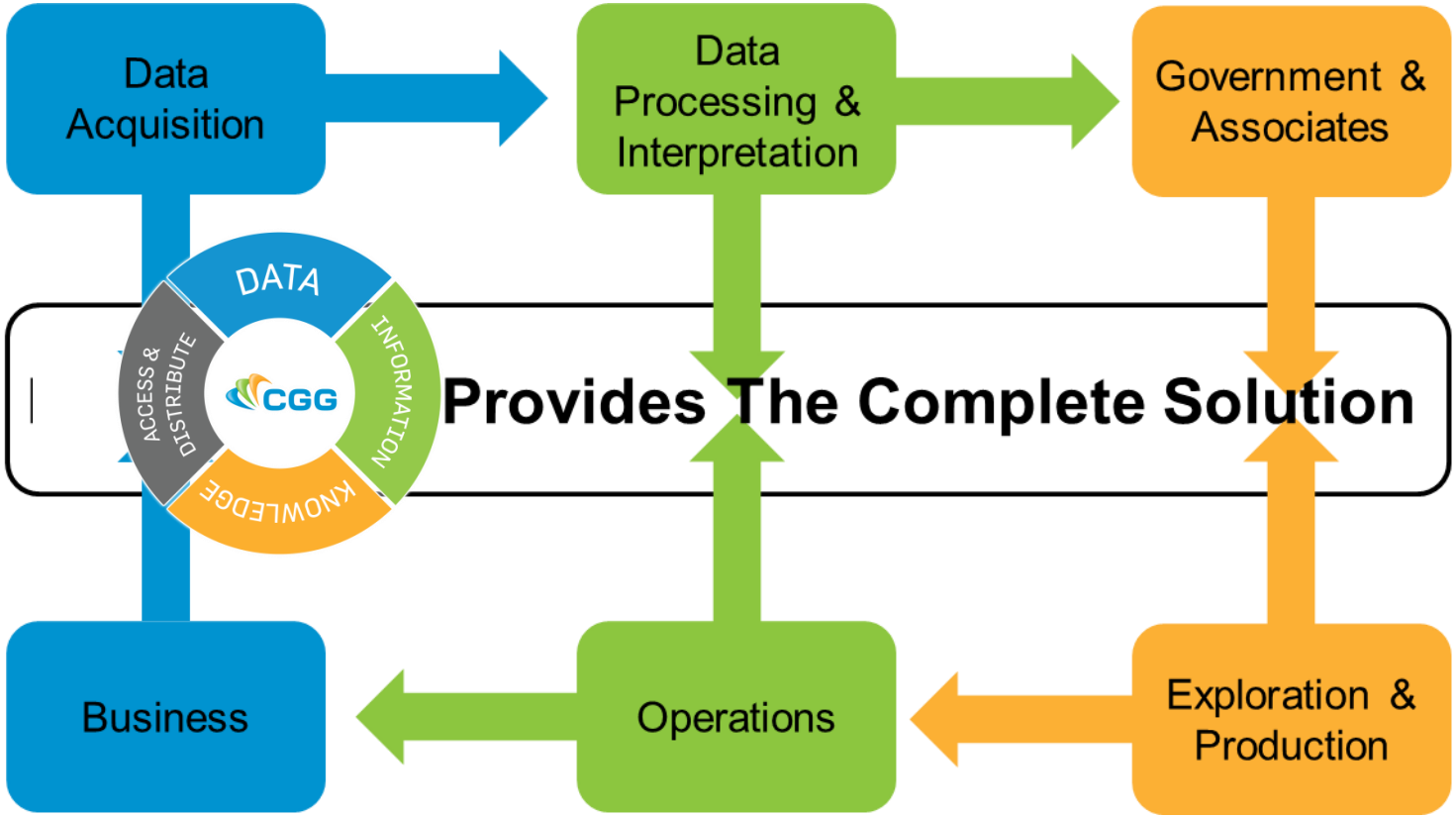
And Finally

Passion for Geoscience
cgg.com

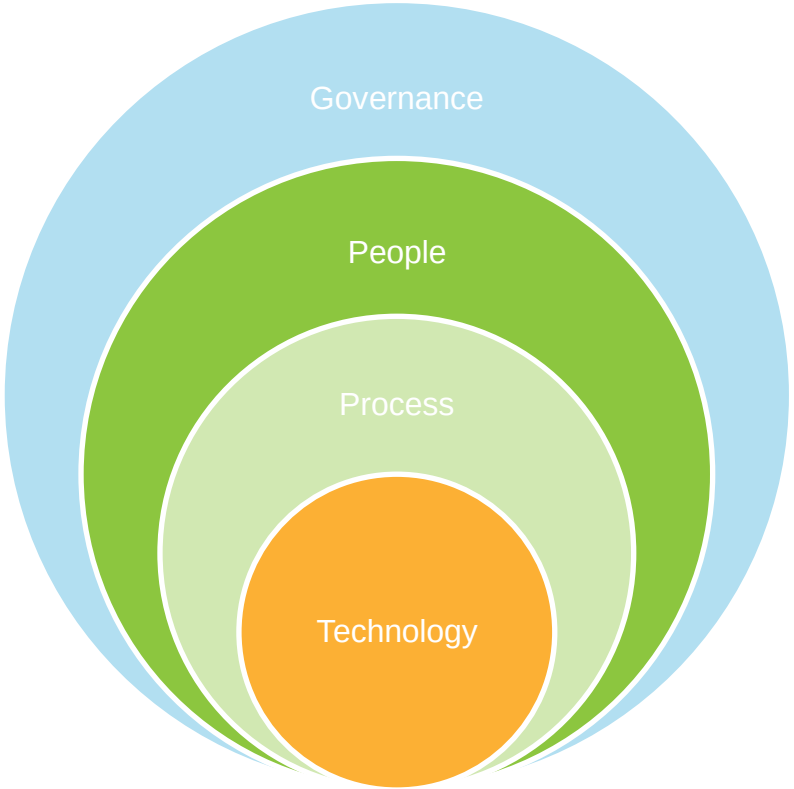
CGG DMS selected by Diskos



Diskos requirement



The complete solution



Thank you

Phil.hodge@cgg.com
Head of Asset Management

Passion for Geoscience
cgg.com