

A large offshore oil rig is shown in the background, situated in the middle of a blue ocean under a clear sky. The rig has a complex structure with cranes and drilling equipment.

## Ways you can use drilling data to improve productivity

Digital Energy Journal  
October 5, Kuala Lumpur

[www.genesispetroleum.com](http://www.genesispetroleum.com)

by Dr. Carlos Damski - CEO

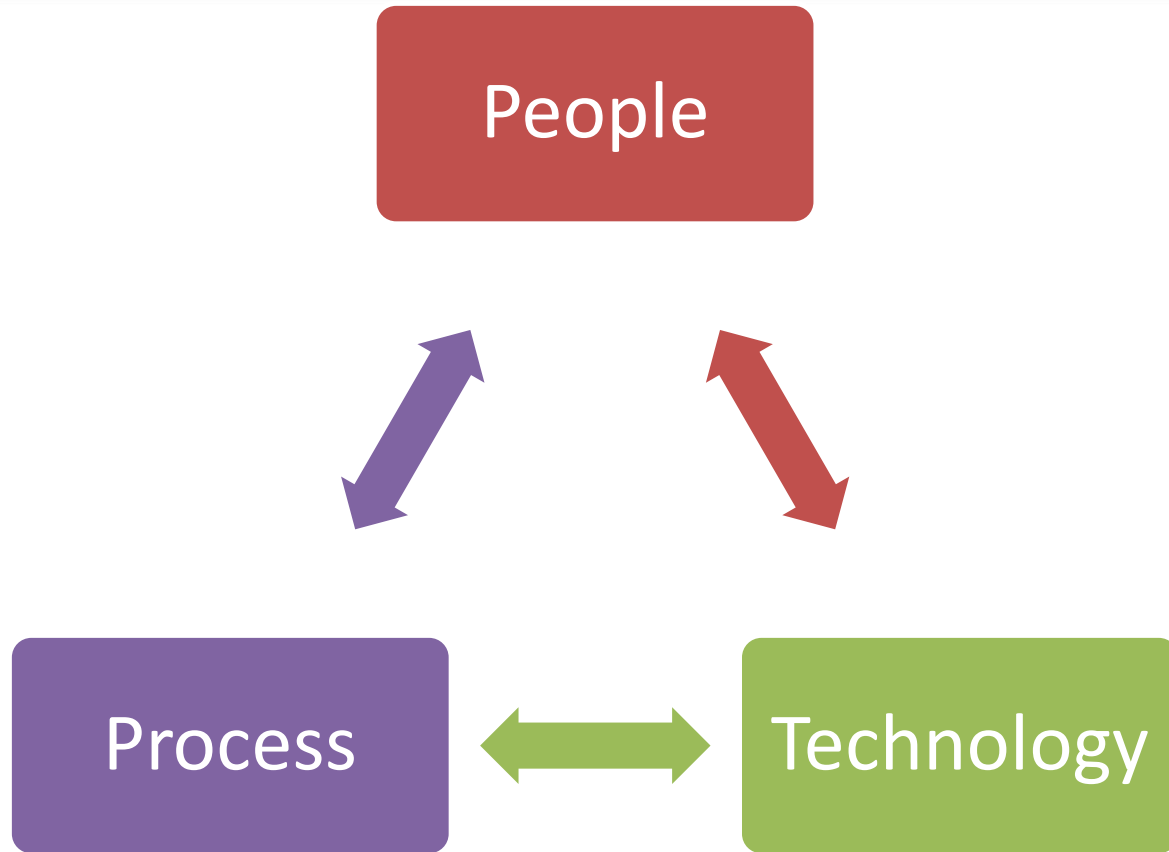


# Today's industry scenario

***Oil prices are low***



# Today's industry scenario



# Today's industry scenario

1. Do not buy new equipment
2. Do not contract new work force
3. Maximize operational efficiency

Let's do it  
in a better way



# **Data** is the key for Performance Improvement



# The value of Data

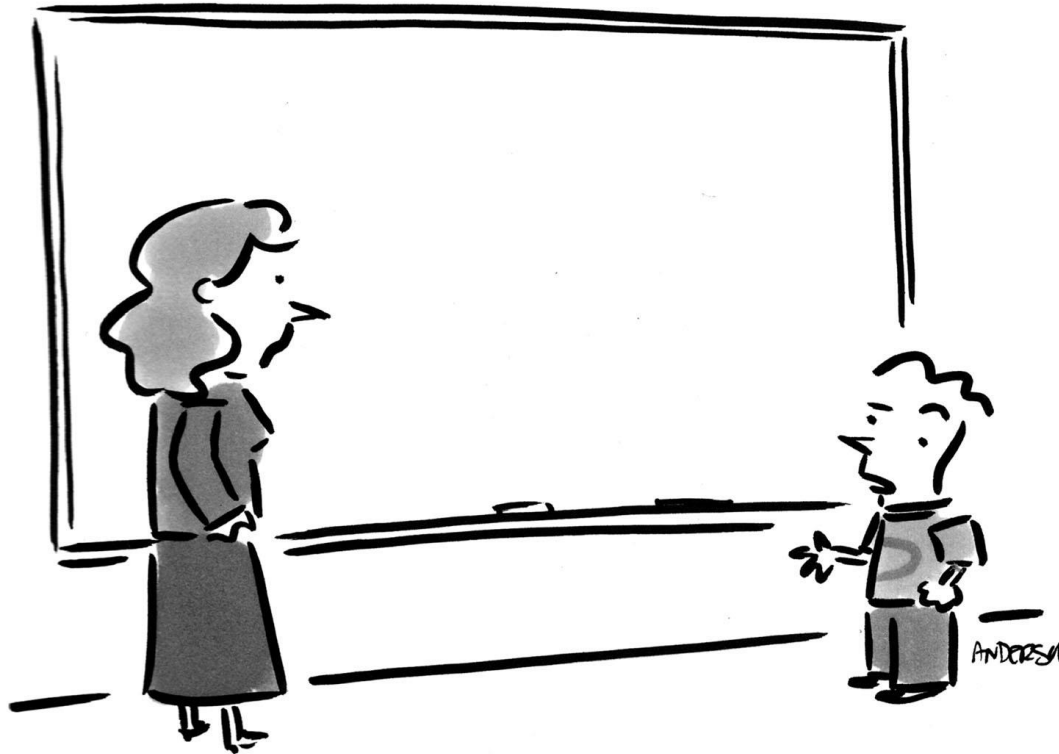
*If we have data, let's look at data  
If all we have are opinions, let's go with mine*  
Jim Barksdale, former Netscape CEO

- Data by itself has no intrinsic value
  - The value comes from the utilization of the data in a Business Function.
- and*
- Value of Analytics based on this data



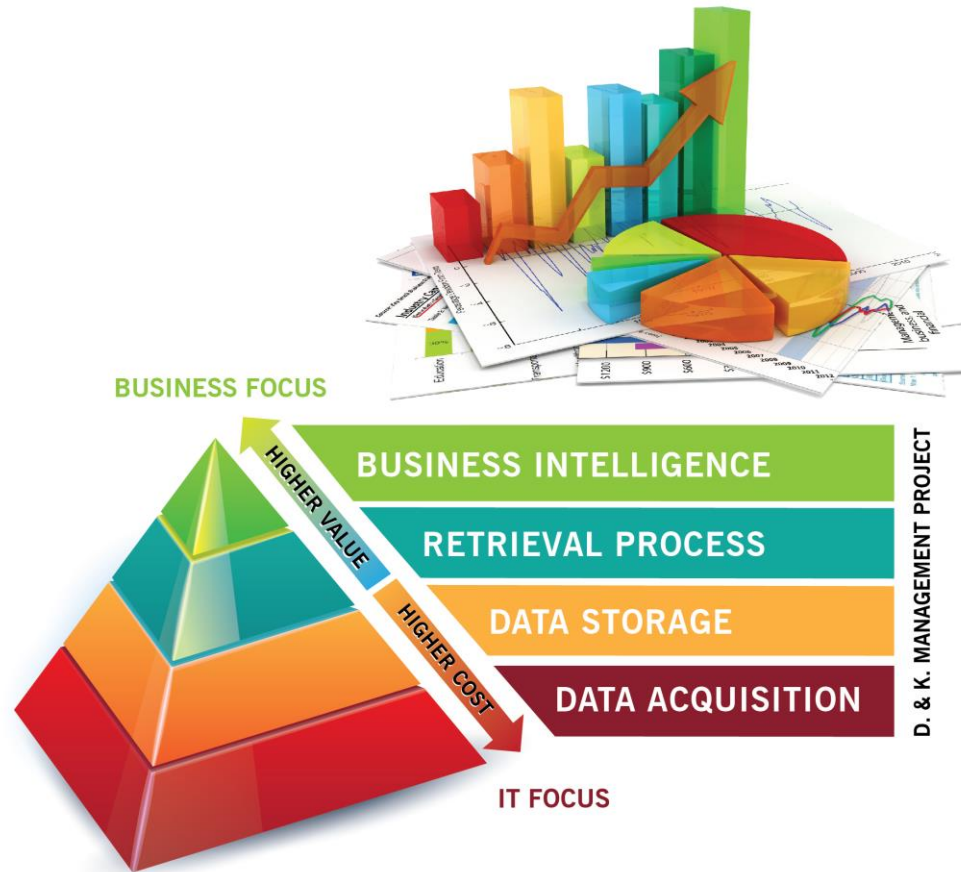
# The purpose of using data

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"Before I write my name on the board, I'll need to know how you're planning to use that data."

# DM and BI





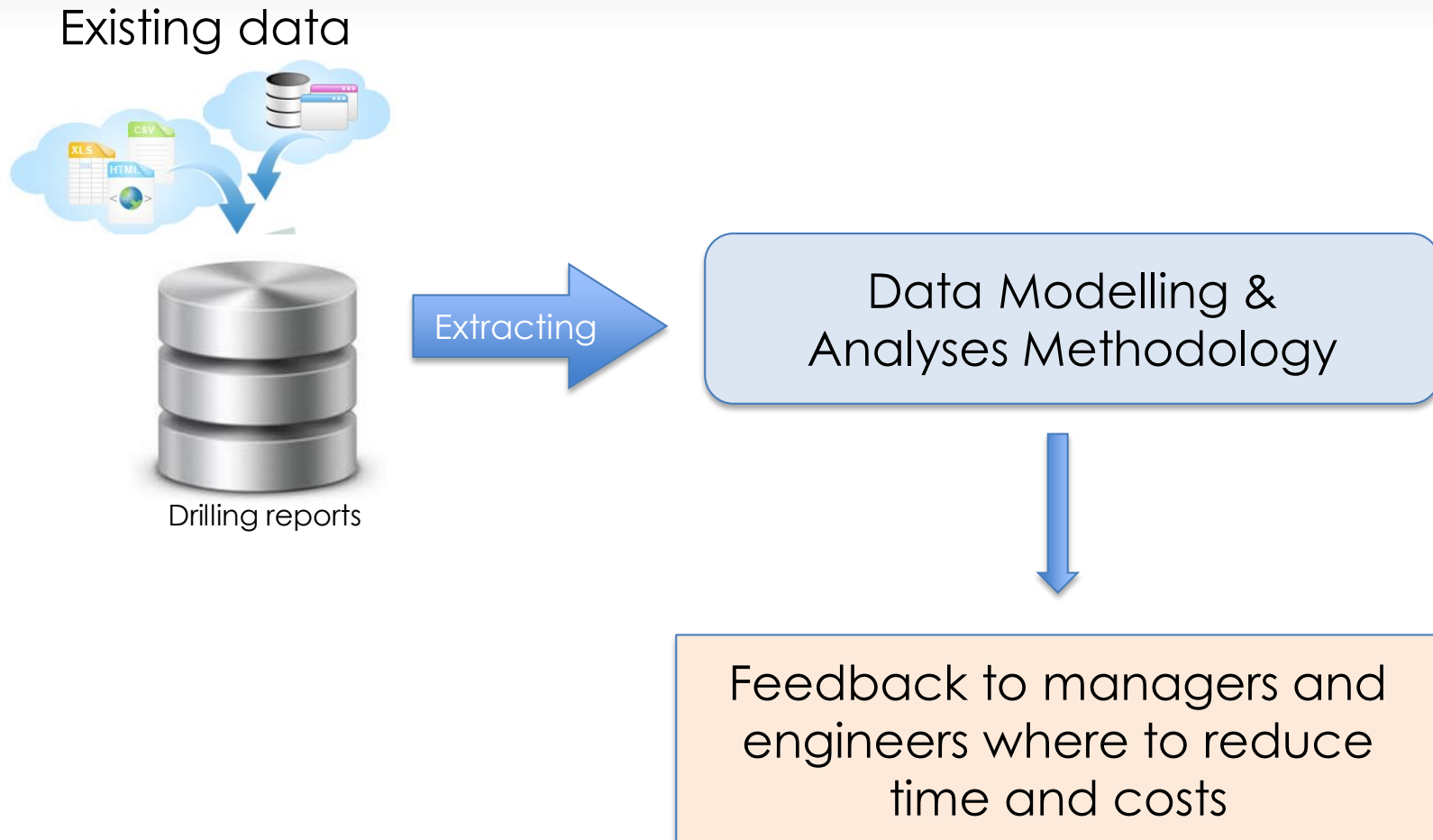
# What you can do NOW

Assist your company to reduce the  
operational time and cost in drilling  
without additional resources.

*Business Engineering*



# How to do it



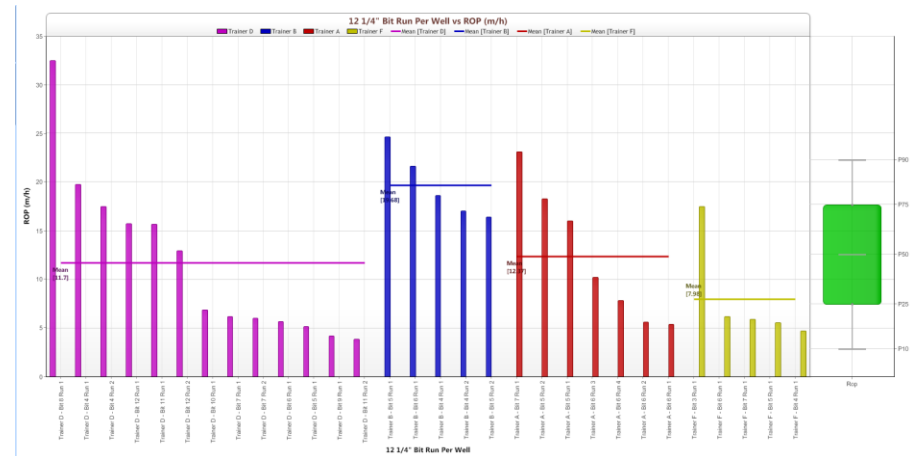
# Business Intelligence

Seeing is Understanding. ✓

ROP (m/h)	Well Name	Depth Out (mt)	Metrage Drilled (m)	Rotating Time (hs)	Hole Size	Serial No.	BitType
3.2	Trainer F	5562	68	21.25	8.5	LF4919	
3.84	Trainer D	5062	24	6.25	12.25	16591	DS
4.205	Trainer D	4920	246	57.51	12.25	1401787	
4.743	Trainer F	4867	198	41.76	12.25	LF3579	M
4.903	Trainer F	5368	76	15.50	8.5	D07CX	ATM
5.169	Trainer D	4638	199	38.50	12.25	KX8043	MO
4.848	Trainer C	3718	89	16.50	12.25	648335	

Two steps to get meaningful plots:

- Data Quality Control (QC)
- Data Aggregation and classification



# DM & BI in Nutshell

## DM

- Data Acquisition
- Data Storage
- Data Quality Control
- Data Retrieval

## BI

- Data Aggregation
- Data Visibility
- Data Plot
- Data Refresh



# Data Acquisition

- Manual
- Sensor - multimedia
- Big Data (3Vs)



# Data Storage



# Data Storage

- It is just a media
- Data “silos” propagate to different medium
- “bad” data also
- Most important:

**How to retrieve.**



# Data QC





# Data QC

- What to clean?
- When to clean?
- How to clean?
- Who is cleaning?
- Where to keep cleaned data?



**Why cleaning?**



# Data Retrieval

- ETL – Extract, Transform and Load
  - Multiple data sources
  - Manipulate data on-the-fly
  - Available for consumption
- Security – who can see what
- Refresh

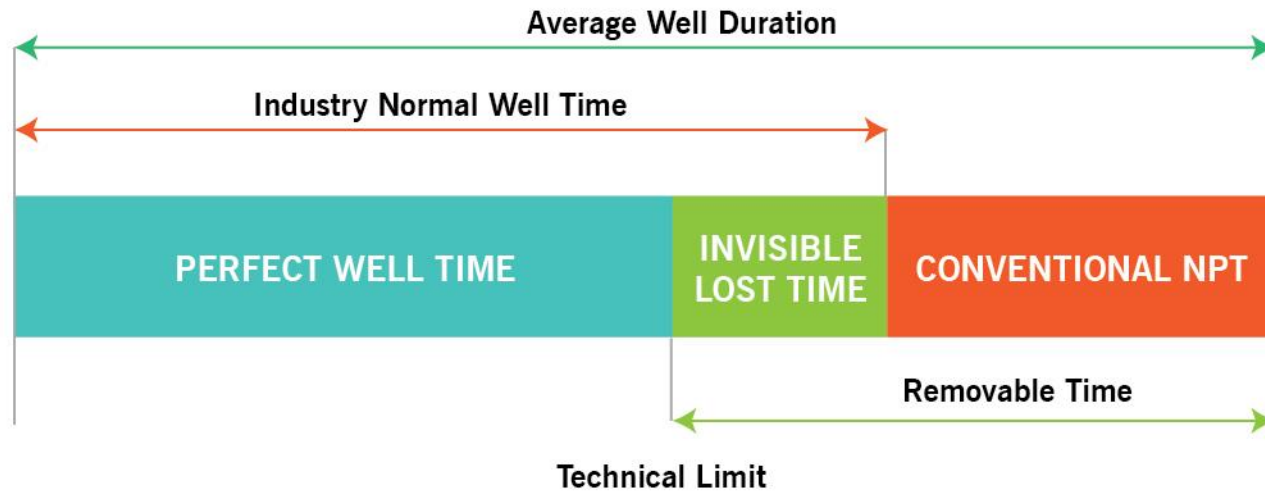


# Benchmarking

## STEPS



# Where to optimize drilling time?

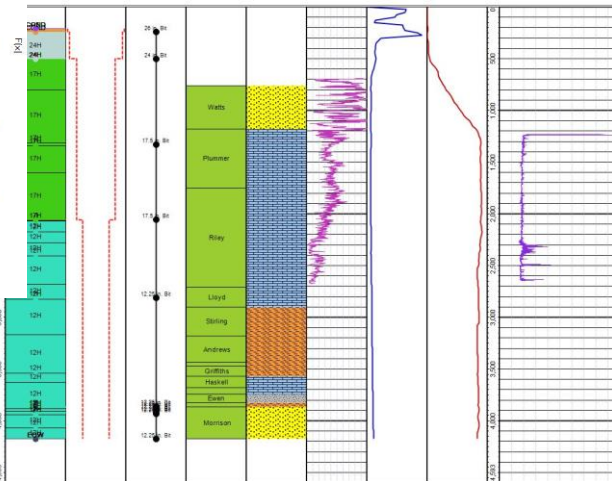
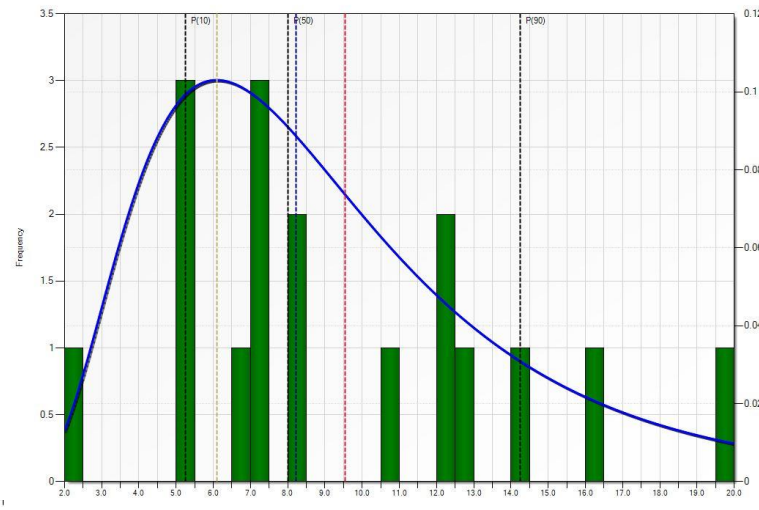
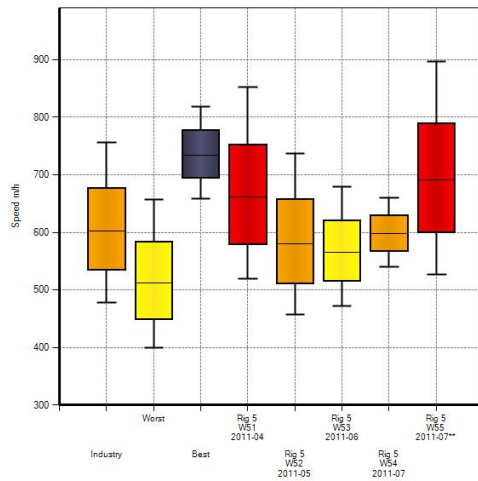
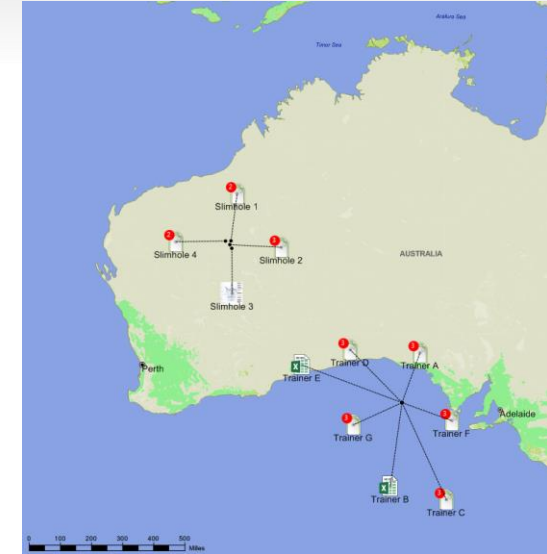
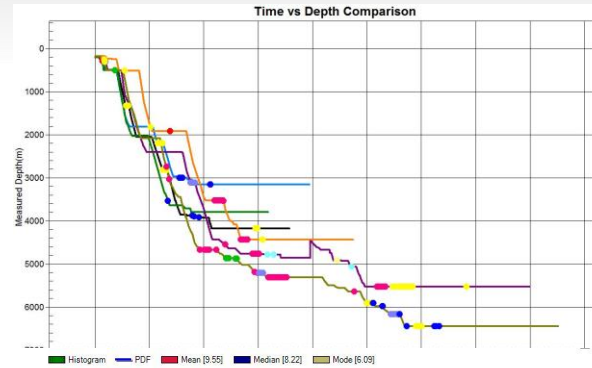
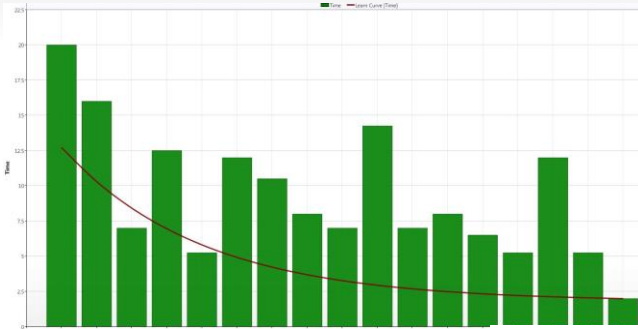


# Some Drilling Data Analyses

- Productive time analysis;
- Process control analysis;
- Non-productive time (NPT) analysis;
- Best composite time (BCT) analytical tech. limit;
- Bit performance analysis;
- Learning curve analysis;
- Benchmark analysis.



# Data Visualization

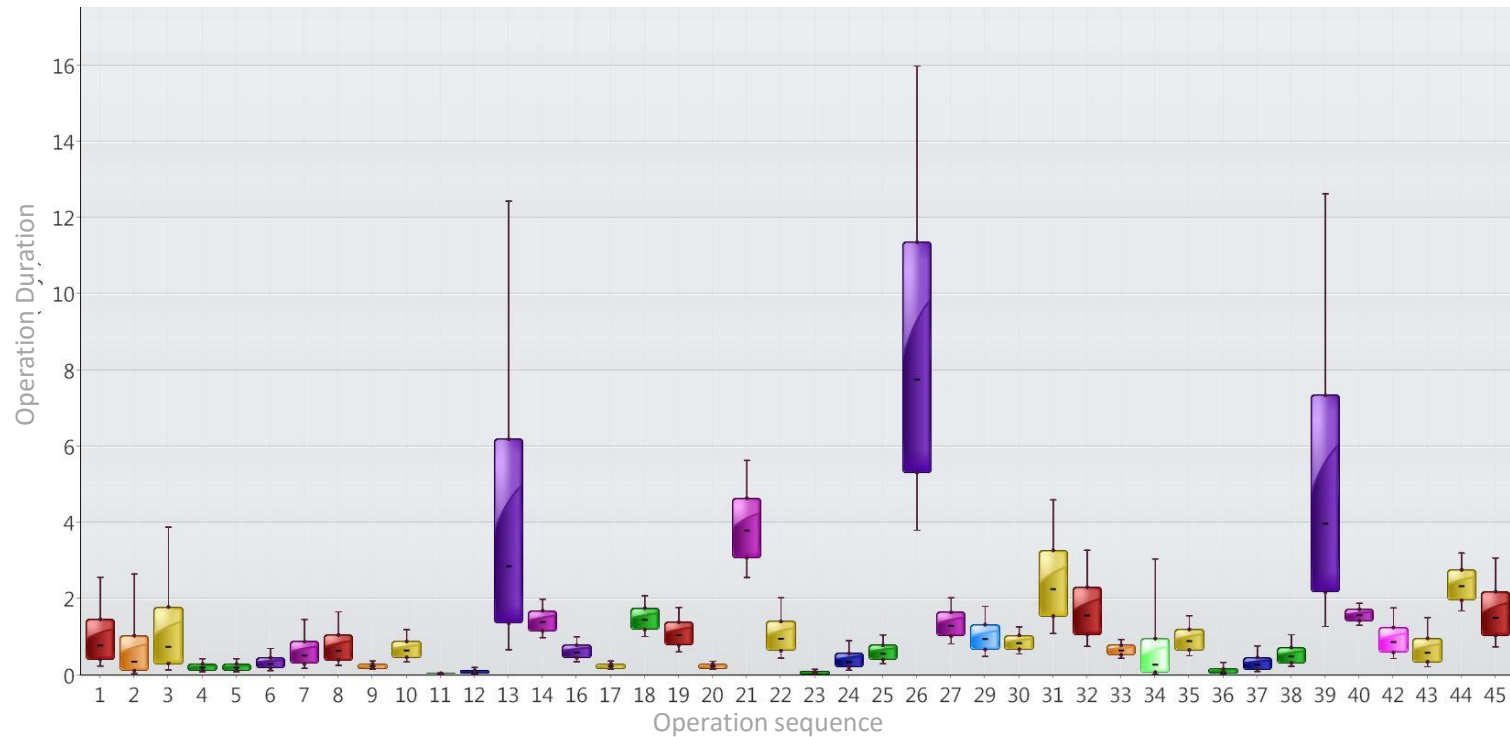


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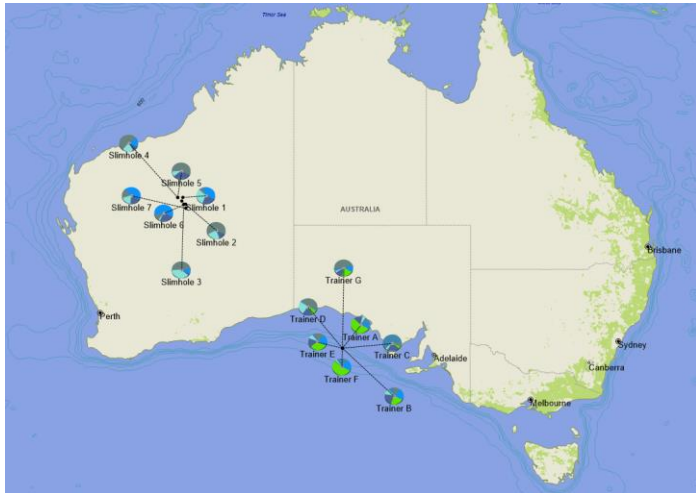
# How the results looks like

## Process Control



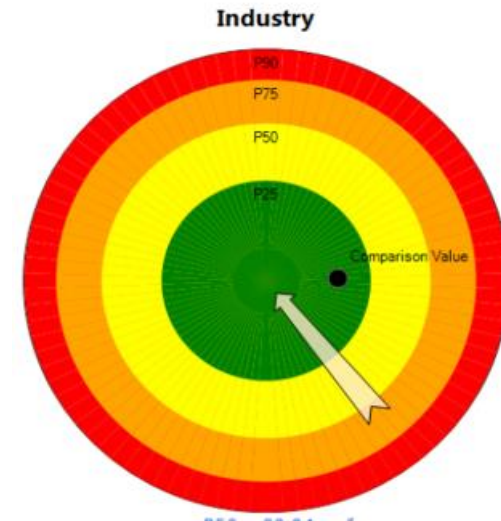
# Where the results are applicable

## Enterprise Solution



*Developing and controlling many fields*

## Single well or Rig Solution

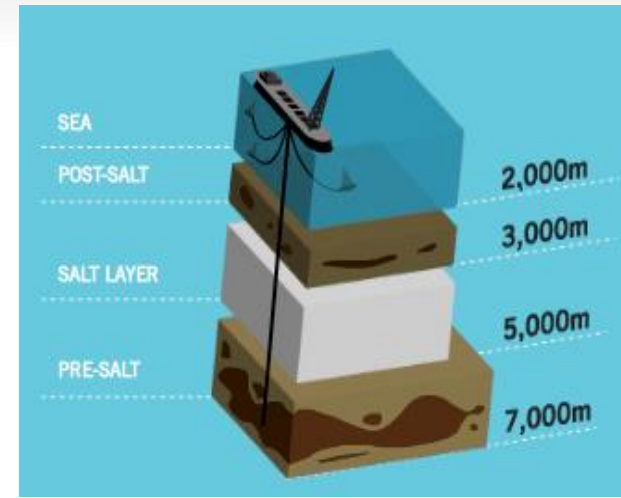
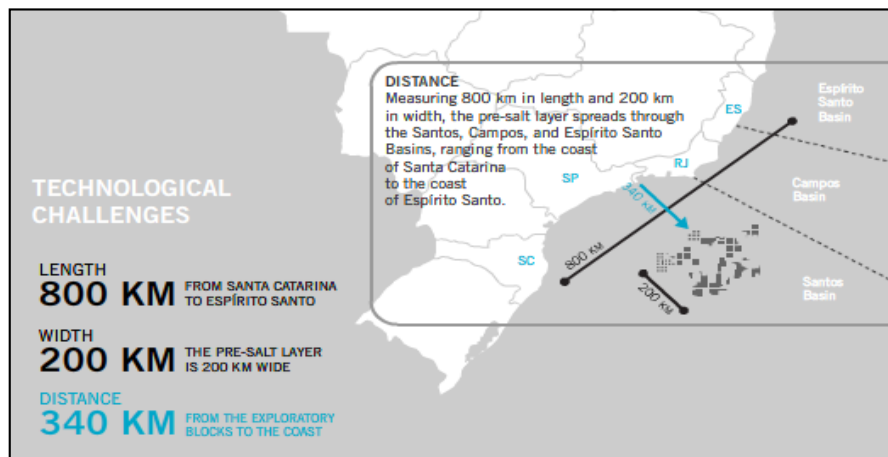


*KPI at operations level*



# Case Study - Petrobras

- Genesis provides solutions to plan and follow up execution of pre-salt wells.
- Genesis manages hundreds of deep-water interventions.



*Participation on this result:*

## **Petrobras reduces pre-salt well drilling time by 55%**

1 July 2014

Petrobras has been drilling wells in the pre-salt in ever shorter times, leveraging its acquired experience and the introduction of new technologies. The average well drilling time in the pre-salt layer of Lula and Sapinhoá fields has declined by 55%, from 126 days in 2010 to 60 days in 2013. In these areas, the company has already achieved durations of close to 30 days between the first and last meter drilled ("dry hole").

[http://brazilbusiness.einnews.com/article/211932552/Ex8kJ9bLks\\_AENH](http://brazilbusiness.einnews.com/article/211932552/Ex8kJ9bLks_AENH)



# Case Study - Anadarko Canada

## Improving Drilling Performance Through Systematic Analysis of Historical Data: Case Study of a Canadian Field

A.R Adeleye, SPE, B.K Virginillo, SPE, A.W Iyoho, SPE, K Parenteau, SPE and Henry Licis, Anadarko Canada Corporation;

### Abstract

Drilling operations daily generate large amounts of data but surprisingly, a significant proportion of these data are not utilized in a manner that shortens the learning curve and promotes drilling efficiency. The authors, through this paper, demonstrate how drilling analysis methodology helped identify performance gaps in a West Central Canadian field.

The above is captured under the much espoused philosophy characterized by the questions:

- Where are we now?
- What is possible?
- How do we get there?

By applying this tool, significant cost savings to the tune of CAD\$7.3 mln have been achieved as at the time of preparing this paper.

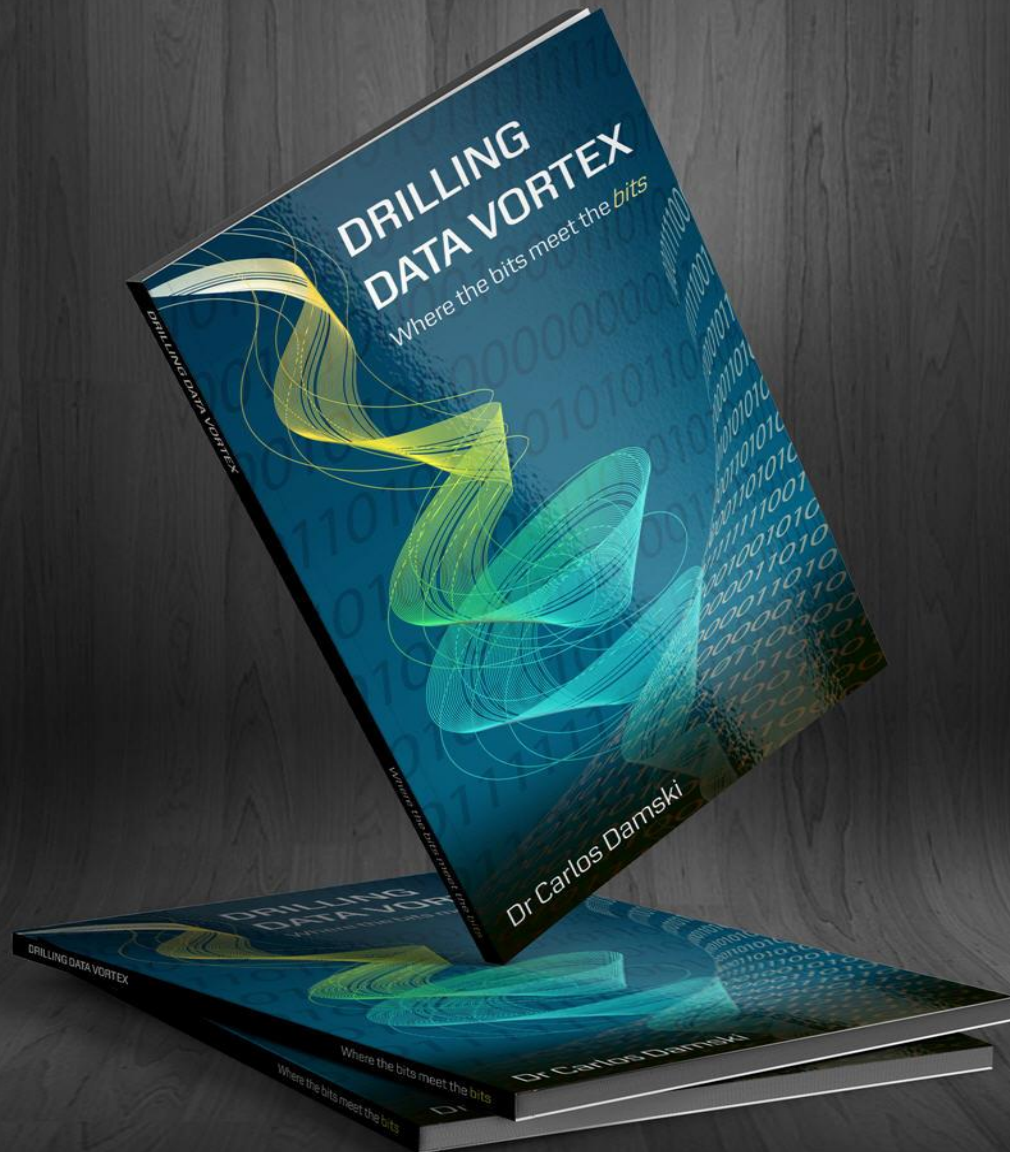


By applying this tool, significant cost savings to the tune of CAD\$7.3 mln have been achieved as at the time of preparing this paper.

**Saved US\$6M**



# New Book





# Doing better than before

*Thank you*

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